The Dissertation Committee for Sandra Kay Jenkins certifies that this is the approved version of the following dissertation:

Low Income African American Adolescent Girl's Eating Choices

Committee:

Sharon D. Horner, Supervisor

Chiquita Collins

Dawnovise N. Fowler

Regina J. Johnson

Gayle M. Timmerman

Low Income African American Adolescent Girl's Eating Choices

by

Sandra Kay Jenkins, B.S.N; M.S.; M.S.N.

Dissertation

Presented to the Faculty of the Graduate School of

The University of Texas at Austin

in Partial Fulfillment

of the Requirements

for the Degree of

Doctor of Philosophy

The University of Texas at Austin

August 2007

Dedication

The fruit of this journey is dedicated to the Lord of my life who planted a desire in my heart and directed me to accomplish it. All glory and honor I give to Him- Proverbs 3:5-6. This work is dedicated to my family who provided support, encouragement and love. A special dedication I give to my Pastor and church family who offered their prayers, support and love.

Acknowledgments

I would like to acknowledge the members of my family and their contributions. I express my love to my husband Leon who handled the household responsibilities and children activities. I am thankful to my daughters Tracie and Dawnna, who referred concerns and issues to Dad when I was in classes and to my daughter LeAnn, who helped with the housework and with Kathleen. Thanks to my youngest daughter Kathleen, for sharing her time with Mom and helping Dad while I was away.

A special thanks to my dissertation chairperson, Dr. Horner, who stayed the course and provided guidance and support from the beginning. Your guidance has been invaluable. Dr. Sharon Horner your patience and "smiley faces" helped to lighten the pressure and brought laughter to me at just the right time. Your quick feedback was greatly appreciated also. I am thankful that you agreed to be my guide during this journey and hope to continue the dialogue in the future.

Thanks Dr. Lorraine Walker for your information about the NRSA Fellowship and encouragement to pursue a Women and Gender Studies portfolio. Dr. Lynn Rew, thanks for opening your data to me and assisting me in the Research Practicum.

Thanks to my committee members Dr. Timmerman who continues her research with women related to weight and disordered eating, Dr. Johnson, who has a passion for our troubled youth, Dr. Collins, who uncover trends in factors that impact on health and Dr. Fowler, who highlights domestic violence. Thank you for your time and in-put from your special areas of perspective and research.

Low Income African American Adolescent Girl's Eating Choices

Publication No. _____

Sandra Kay Jenkins, Ph.D.

The University of Texas at Austin, 2007

Supervisor:

Sharon D. Horner

The aim of this exploratory qualitative study is to identify the problems African American adolescent girls face in making eating choices and to learn how they make decisions about eating. Differences related to culture and socioeconomic status influences, and decision-making strategies were explored.

Three sites in African American communities were selected for focus groups and individual adolescent girl-parent dyad interviews for data collection. Data were gathered in 5 focus groups and 4 individual adolescent girl-parent dyad interviews with African American adolescents (n=30). Bronfenbrenner's Ecological Systems Theory (EST) provided the conceptual framework for informing the analysis and interpretation of the data.

Using grounded theory methods, the researcher identified the core variable or basic psychosocial problem that faced the participants was *receiving mixed messages*.

Low income African American adolescent girls *receive mixed messages* about nutrition, health and foods from their microsystems that are comprised of friends and family, and from macrosystems that include textbooks and the media.

Filtering the mixed messages is the basic psychosocial process that low income African American girls use to handle the barrage of mixed messages they receive from their microsystems and macrosystems regarding eating choices and exosystem influences. The process of *filtering the mixed messages* is comprised of five phases: *Applying a lens, surveying available resources, weighing influences*, then choosing *alternating eating strategies* and *evaluating their eating choices*. How the adolescent girl applies a lens, surveys resources and weighs the influences together impact the alternating eating strategies that they implement. Over time they evaluate the effectiveness of their eating choices.

Table of Contents

CHAPTER I: INTRODUCTION

African American adolescent girls have a higher incidence of overweight status compared to other adolescent girls (Center for Disease Control [CDC], 2002). Excess weight is reported in 16% (over 9 million) of children and adolescents ages 6-19 years of age (CDC). However, the CDC documented that African American adolescent girls have a greater incidence (21%) of overweight status than White (14%) girls. These rates are impacted by eating patterns reflective in eating choices of adolescents (Neumark-Sztainer, Story, Hannan, & Croll, 2002). Adolescent eating choices do not occur in isolation but are influenced by environmental factors (home, school, and neighborhood resources) and interactions with family and friends (Morland, Wing, & Roux, 2002). The effect of environmental factors on eating choices has been generally addressed individually in most nutrition literature (Eyler, Haire-Joshu, Brownson & Nanney, 2004; Morland, Wing & Roux, 2002); however, several gaps continue to exist. These gaps include scant information about ethnic and cultural differences in eating choices, the role of socioeconomic status [SES] on eating choices, the impact of parents on eating choices, and ways to change adolescent eating behaviors (Jenkins & Horner, 2005).

In order to address the gaps, qualitative methods that include obtaining information about the impact of environmental factors, in a cultural context, were needed. The aim of this study was to identify challenges that low-income African American adolescent girls face in making eating choices and to understand the process of how they made decisions about eating.

Despite intervention studies to decrease the effects of unhealthy eating behaviors, African American adolescent girls continue to make unhealthy eating choices. These

eating choices have led to the doubling of percentages of obesity and overweight rates among children and youth over the ages of 12-19 years old (Institute of Medicine [IOM], 2002). This trend of increasing overweight prevalence has been documented in the National Health and Nutrition Education Surveys (NHANES) of 1971-1974 (6.1%); 1976-1980 (5.0%); 1988-1994 (10.5%); and 2003-2004 (17.4%) (CDC, 2006). The rise in overweight rates led Congress to charge the IOM to develop a plan examining behavioral factors (hunger, cravings, and food choices, such as fast foods), social factors (peer influences, parental involvement, and availability of foods in the home, school, and community), environmental factors (neighborhood food availability), and cultural factors (cultural food preferences) that influence childhood eating patterns and weight (Cullen et al, 2000; Eyler et al., 2004). The IOM also focused on meals in the school environment.

Contributing to the school meal environment is a mandate of compliance with the Dietary Guidelines for Americans that include food quality, the availability of whole-grain foods, low-fat milk, and fresh produce (IOM, 2002). Public school cafeterias that offer federally subsidized school meals are required to meet this regulatory nutritional standard (IOM). There are approximately 28 million school-aged children each day at school who participate in the National School Lunch Program and 8 million participate in the breakfast program (IOM). Most of the students that participate in these programs are eligible for free or reduced lunch.

However, competitive foods (foods and beverages sold outside of the federal program) are also available in schools. These foods are generally high in fat or sugar, and low in nutrients. Although, competitive foods have limited regulation, the sale of these foods provides needed income for the schools. Only 21 states have policies that

restrict competitive foods (IOM). According to the IOM (2002), almost 92 percent of school nutrition programs generate revenue to pay for staff and to purchase equipment and foods through the sale of competitive foods and soft drinks. Many schools (e.g., 38.2% elementary; 50.4% middle/junior high; and 71.9% senior high) have contracts with soft drink companies. Additionally, schools receive sales incentives from the drink companies (e.g., 24% elementary; 40.9% middle/junior high; 56.7% senior high) (IOM). Thus, school environments provide an important setting that may influence eating choices of adolescents.

Behavioral, social, and cultural factors operate within the different environments of the adolescent and influence eating choices (Cullen et al., 2000). Yet, the way in which adolescents make decisions about what to eat and what not to eat is not well understood.

Purpose of the Study

The purpose of this exploratory qualitative study is to identify the challenges low-income African American adolescent girls face in making eating choices and to learn how they make decisions about eating. In this study eating choices is a concept that includes food choices (decisions about food, whether they are healthy or unhealthy), food preparation, food availability (based on family SES, residential geographical location), and cultural preferences (taste, food appeal). Adolescents' eating choices are also influenced by interactions with parents, family members, and peers.

This study uses grounded theory methods for data collection and analyses. Data were gathered in five focus groups and four dyad interviews. Three of the focus groups and all of the dyad interviews were conducted with African American girls only. One focus group consisted exclusively of boys and the other was a mixed gender group.

Inclusion of boys in the study helped illuminate an aspect of the significant influence of males as a part of the girls' environments as brothers, peers, and romantic interests. The boys provided information on their perceptions of girls' eating choices. The inclusion of boys in this study provided in-depth and rich information about a significant environmental influence on girls' eating choices. The dyad interviews were conducted in the adolescent girls' homes. Parents were invited to participate in a segment of the dyad interviews to provide additional contextual information about familial and neighborhood environmental influences that might not have been known by the adolescent girls.

Background of the Study

Several health problems and chronic diseases have been associated with unhealthy eating behaviors, such as being overweight or having diabetes (Eyler et al. 2004; Morland, Wing & Roux, 2002). For example among young women under the age of 44 years, African American women (13.2%) have twice the prevalence of diabetes compared to White women (5.6%) (CDC, 2002). In addition, African American women's rate of heart disease is 65% higher than White women (CDC). Health outcomes from these chronic diseases are poorer for African American women due to a host of environmental factors, such as established unhealthy eating behaviors, cultural influences, limited access to healthcare, and lower socioeconomic status, such as family SES and neighborhood SES (United States Department of Health and Human Services [USDHHS], 2000). Thus, diet can have an impact on the risk and the severity of chronic diseases as well as the effects of the diseases (USDHHS). These statistics identify health disparities experienced by African American women, and when considered in conjunction with the increasing prevalence of overweight and obesity among African American girls, indicate a potential

risk that as girls progress into womanhood they too may experience these health disparities as they age.

In addition to the rising prevalence of childhood overweight, the NHANES data documents that children and adolescents, ages 4-19 years, are having increases in cholesterol levels (American Heart Association, 2005). The mean total cholesterol for this age group is 167 mg/dl for girls and 163 mg/dl for boys. African American girls (171 mg/dl) and boys (168 mg/dl) have higher levels of total cholesterol than White girls (166 mg/dl) and boys (162 mg/dl). Investigating eating choices among African American adolescents may provide foundational information to develop interventions specifically tailored to the needs of maturing African American girls and designed to prevent or reduce the onset of these chronic health outcomes. Further discussion of the background of the problem will include adolescent eating choices, environmental factors and cultural factors that may influence eating choices.

Adolescent Eating Choices

Adolescents, in general, are not consuming a diet that is in accordance with USDHHS recommended food intakes (Lytle et al., 2002). Adolescents are encouraged to meet the daily recommendations by eating three meals a day and having healthy snacks. The dietary guidelines for Americans (USDHHS, 2000) recommend that adolescent girls between the ages of 14-18 years consume an 1800 kilocalorie (kcal) diet daily. This diet consists of 3 cups of dairy (fat free and low-fat) products, 5 ounces of lean meats and beans (1 ounce per serving), 1.5 cups of fruits (3 servings), 2.5 cups of vegetables (5 servings), 6 ounces of grains (mostly whole grains and 1 ounce per serving), and no more than 25-35% of calories consumed from fats. Also, salt is limited to no more than 1779

milligrams daily and added sugars are limited to 5 teaspoons (20 grams) daily (USDHHS).

Even though a large percent of adolescents are eating three meals a day, they are also eating unhealthy snacks. According to Dwyer et al. (2001), 31% of adolescents are eating less than three meals a day, 69% are eating at least three meals a day, and 80% are snacking more between meals. These snacks generally consist of processed food products which are high in fat and salt (USDHHS, 2000) and are readily available at schools in vending machines located in public hallways and in the cafeteria. Adolescents (66%) who bring lunches instead of buying lunch at school are commonly bringing foods that have processed meats, chips, beverages, cakes and cookies (Conway et al. 2002). These eating patterns reflect adolescents' eating behaviors that have continued to change over the last 6 years and reflect poor nutrient intake. Overall, adolescents are not eating enough servings of fruits and vegetables (Neumark-Sztainer, Story, Hannan, & Croll, 2002).

Environmental Influences on Eating Choices

The literature documents that a variety of factors are associated with eating patterns among adolescents. Some studies have explored the social and environmental contexts of adolescents' eating and included the settings (e.g. home, school, and community) in which food was consumed, residential geographical location (neighborhood socioeconomic status [SES]), family SES, and cultural preferences (Morland, Wing & Roux, 2002). Family SES and cultural factors have been recognized as strong influences on health behaviors that lead to chronic diseases such as heart

disease, hypertension, and diabetes in African Americans (Morland, Wing, & Roux, 2002; Ruzek, 1997).

Environmental Settings

The three primary environmental settings in which the adolescent is active are the home, school, and community. A large portion of the adolescent's day is spent in school and community settings interacting with friends and peers (Jenkins & Horner, 2005).

At school, the adolescent frequently makes eating choices that may be similar to those of their friends and peers. School environments may foster unhealthy eating choices by providing access to competitive food (chips, soda, cakes, candy) for quick and convenient dietary intake (IOM, 2002). Also, school policies may permit off-campus food purchases for lunch time.

In the community, the adolescent may purchase foods in restaurants and convenience stores when spending time with friends and peers. In low-income neighborhoods there are numerous fast food restaurants that provide easy access to high fat and snack foods (Morland, Wing & Roux, 2002; Zenk, Schultz, Israel, et al., 2005b) as well as "dollar" purchases and opportunities to "super-size."

In the home the adolescent may have little or no input about food selection or preparation. Food choices are dependent on availability of choices in the home or the adolescents' ability to purchase foods from the neighborhood. The parents are making eating choices that will influence the adolescent's eating choices at home and that may influence what happens in other settings (Jenkins & Horner, 2005). Obtaining a perspective of the adolescents' family and residential environment may be beneficial in gaining an understanding of the eating choices that are available to adolescents.

Residential Geographical Location

Foods recommended for healthy eating are often very expensive or unavailable in good quality or quantity in retail stores serving low SES neighborhoods (Morland, Wing & Roux, 2002). Therefore, residential geographical location may affect African American adolescents' abilities to make healthy eating choices, due to cost, food selection, and availability of nutritious foods (Morland, Wing & Roux). It is clear that SES is more than income; it also involves environmental resources available to African American families and their communities.

Sixty-two percent of African American adolescents are living at or below the poverty level (USDHHS, 2000). These adolescents are likely to exhibit eating choices reflective of their family's SES. Eating choices of adolescents with low SES include consumption of foods high in starches, saturated fats, sugars, sodium, and calories; in order to achieve satiety, they consume a large amount of these foods (Morland, Wing & Roux, 2002; Spear, 2002). These eating choices produce more malnutrition than is exhibited by those adolescents with higher SES (USDHHS, 2000). Factors that contribute to these poor eating choices include limitations in food choices, access to affordable and varied food sources, and less income to purchase some nutritious foods (Morland, Wing & Roux, 2002).

Cultural Influences on Eating Choices

African American cultural food preferences are a blend of several cultures as well as influences from the different geographical locations where the African and Caribbean diasporas thrived. In addition, the socio-cultural and economic restraints experienced by slaves continue to influence food choices and consumption among their descendants

today. African American food, also known as soul food, has been influenced by African and southern styles of food preparation and cooking. A historical overview from the Africana Encyclopedia of these influences is briefly presented (Gates & Appiah, 2005).

Historical Perspective

African slave abductors along with bringing African slaves; brought many of the native fruits and vegetables to the Americas which were adopted into the diets of the plantation owners. Slaves who became cooks and worked in the owners' household, out of necessity, learned to prepare the food of the south with known preparation methods of their homeland. African American foods and preparation methods also stemmed out of the slaves' resourcefulness in using the foods that were left-overs from the plantation owners' meals or deemed inedible such as pigs' feet and chitterlings (Gates & Appiah, 2005). Africans traditionally cooked meats in stews or roasted meats over flames. Many slaves in America adopted the European practice of frying meat which served to prevent it from spoiling since there was no refrigeration or preservatives available. The West African tradition of cooking all edible parts of plants (especially collards) and animals helped the slaves to survive in the United States: They simmered these parts in oil, peppers, and spices (Gates & Appiah).

Although, African slaves underwent emancipation, urbanization, and migration to the cities of the North, African Americans throughout the United States have, completely or in part, preserved their foods and cooking methods. These foods and methods are rich in traditions that have been handed down through generations and are easily seen during times of celebration and family gathering (Gates & Appiah, 2005).

Cultural Perspective

Traditionally, food choices in a family are made by the mother and are based on several factors including the mother's eating choices that were established during her childhood within the African American culture (Hudson & Stern, 2000). Some food-based traditions contribute to poor nutrition. For example, soul food relies on sodium, fat, and lard that are used for flavoring and food preparation and the preferred method of food preparation is frying which leads to increased intake of fat and cholesterol (Hudson & Stern). Food choices also consist of purchasing non-perishable food items that are high in sodium, such as canned and packaged foods with long shelf lives (Hudson & Stern).

Foods are unevenly distributed within some low-income African American households (Counihan & Van Esterik, 1997): For example, less than recommended serving sizes are provided to the younger children. Although in many families the children are served meals first and the mother may eat after everyone else has eaten, thereby reducing food available to the mother (Counihan & Van Esterik, 1997). This leaves the mother to seek alternative food items that will satisfy her hunger. This limited or uneven food distribution is usually driven by the family budget.

Cultural preferences are also associated with African American women's weight and body image. Historically, African American men and women prefer a fuller body size (Baughcum, Chamberlin, Deeks, Powers, & Whitaker, 2000; Counihan & Van Esterik, 1997). Counihan and Van Esterik have investigated the relationships between culture and the body in many groups including African cultures. In several cultures of African origin, thinness is perceived as illness or frailness, whereas a plump body is perceived as strong, healthy, and fertile (Counihan & Van Esterik). This cultural

preference may affect the adolescent's body image and perception of self. The weight status labeled by the American culture as overweight, may be seen by African American culture as a healthy weight. There is a greater acceptance in the African American culture of a larger body size among African American women (Baughcum et al.). This cultural preference in body image could influence weight perception and eating choices of African American adolescent girls (Beech, et al., 2004).

Significance of the Study

African American adolescents' eating choices are influenced by the general American culture as well as the African American culture. The general American culture's eating choices include junk food consumption, eating out, and decreased eating at home (Morland, Wing & Roux, 2002; Xie, Gilliand, Li, & Rockett, 2003). This may lead to increased consumption of fast foods that are high in fat, sodium, and calories. Continual consumption of these foods can lead to increased weight gain among African American adolescents (Morland, Wing & Roux, 2002). Additionally, cultural factors such as taste preferences and family practices may provide influences related to the perception of body weight, food choices, and food preparation. The lack of information on these cultural influences, along with other gaps to be discussed below, highlights the significance of the current study.

Gaps in Knowledge of Adolescent Eating Choices

Jenkins and Horner (2005) reviewed the literature on eating patterns and influences on the eating choices of adolescents. In spite of what is known about eating choices, there continues to be a number of gaps in knowledge about adolescents' eating choices. These gaps include the gender representation and ethnic representation in

samples of adolescents in nutrition studies, and little or no information about SES influence and parental influences on adolescents' eating choices.

Gap #1: Gender Representation

Research findings support the concern about adolescent girls' overweight status (25.7%), leading to heart disease and diabetes because of eating choices (Eyler et al., 2004; USDHHS, 2000). In contrast, a lower percent of African American boys are overweight (20.5%) and the prevalence of excess weight is not increasing at the rate as that experienced by African American girls (American Heart Association, 2005). This disparity in overweight experienced by African American girls when compared to African American boys supports the need to study their eating choices and the impact on health.

Gap #2: Ethnic Representation

Nutrition studies have included African American, Hispanic and Asian adolescents in their samples but their numbers were low in comparison to White adolescent participants (Croll, Neumark-Sztainer, & Story, 2001; Lytle et al. 2003). Whether adolescent eating choices are the same across ethnicities needs closer inspection. Based on previous studies, African American adolescents are exhibiting higher risks for chronic illnesses related to nutritional intake than other ethnic groups. However, African American adolescents need to be included in sufficient numbers in nutritional research to generate useful findings for planning further research and interventions for this group (Jenkins & Horner, 2005).

Gap #3: SES Influence

Low SES may impact eating choices due to affordability and accessibility. The research findings related to the influence of socioeconomic factors on the disparities in nutritional intake and prevalence of chronic illnesses related to eating behaviors of African American adolescents are ambiguous. Neumark-Sztainer and colleagues (2003) found that SES did make a difference in healthy food intake among adolescents, while Xie et al. (2003) reported that higher income groups were meeting recommended dairy products and sugars compared to the lower income groups. The suggestion that adolescents from higher SES groups have better eating choices and that lower SES has a negative influence on healthy eating (Edmond, Baranowski, Baranowski, Cullen, & Myers, 2001) must continue to be examined.

Gap #4: Parental Influence

Little is known about the influence parents have on adolescents' eating choices. Studies designed to improve the nutritional intake of adolescents have been conducted, but they have not yielded sufficient or lasting change in eating choices (O'Neil & Nicklas, 2002; Patrick et al. 2001). There is a gap of knowledge about what should be included in interventions for African American adolescents, how to design interventions, whether the interventions need to be tailored to address gender differences, and what resources are needed. A preliminary strategy for partially filling this gap is to gather information directly from adolescents and parents related to the adoption of health promoting behaviors. The parents' perspective related to environmental factors must be included when planning interventions that are tailored to address home and neighborhood resource availability. Adolescents' and parents' responses to exploratory inquiries will

provide valuable information to close these gaps in knowledge about adolescent eating choices.

Summary of Significance

The focus of this study on African American adolescent girls' eating choices addresses a goal identified in Healthy People 2010 to decrease the incidence of chronic diseases among minority populations (USDHHS, 2000). One strategy to accomplish this goal is by promoting healthy eating among African Americans. A group that is especially vulnerable to unhealthy eating choices is African American adolescent girls. Several factors contribute to this vulnerable status; developmental changes, cultural views of eating choices, body size, body image, and the emergence of chronic health problems as they mature into young women (USDHHS).

Adolescence is a period of biological, emotional, developmental, and social changes. Biological changes include accelerated physical growth, hormonal increases, and increased fat deposits for girls, which can double the nutritional requirements during this time especially for iron, calcium, and protein (Whitney & Rolfes, 2002). Emotional changes such as growing independence, social changes such as the need for acceptance with peers, and an increasingly busy social life influence eating choices and nutrient intakes. This period of development is also characteristic of a time of choices and decision-making critical to their lives (Lerner & Castellino, 2002). These decisions include choices about food preferences, selection, preparation, and consumption.

African American adolescent girls are experiencing a higher incidence of overweight status compared to African American boys and other ethnicities (CDC, 2002). Several chronic diseases that are associated with being overweight places African

American girls' in a high risk group for developing these diseases. Overall, intake of inadequate nutrients during adolescence and adulthood will impact their overall health status for childbearing and childrearing (USDHHS, 2000).

Identification of the process associated with African American adolescent girls' eating choices will provide focus and direction for developing interventions designed to change unhealthy eating behaviors. Past research on eating behaviors has focused on patterns of nutrient consumption, however few studies have been conducted using qualitative methods to obtain perspectives from African American adolescents (Croll et al. 2001; Neumark-Sztainer, Story, Perry, & Casey, 1999; Odea, 2003).

The grounded theory approach of this study will be useful in order to generate propositions that could explain the "real world phenomena" (Strauss & Corbin, 1990, p. 22) of African American adolescent girls' eating choices. This information will aid researchers in designing a culturally appropriate intervention to promote healthy eating choices. Additionally, the grounded theory approach assists the researcher in explaining perspectives on behavior and developing theory related to eating choices in African American adolescent girls. Incorporating a multi-factor framework will assist in identification of interactions between key factors that impact eating choices of African American adolescent girls.

Conceptual Framework

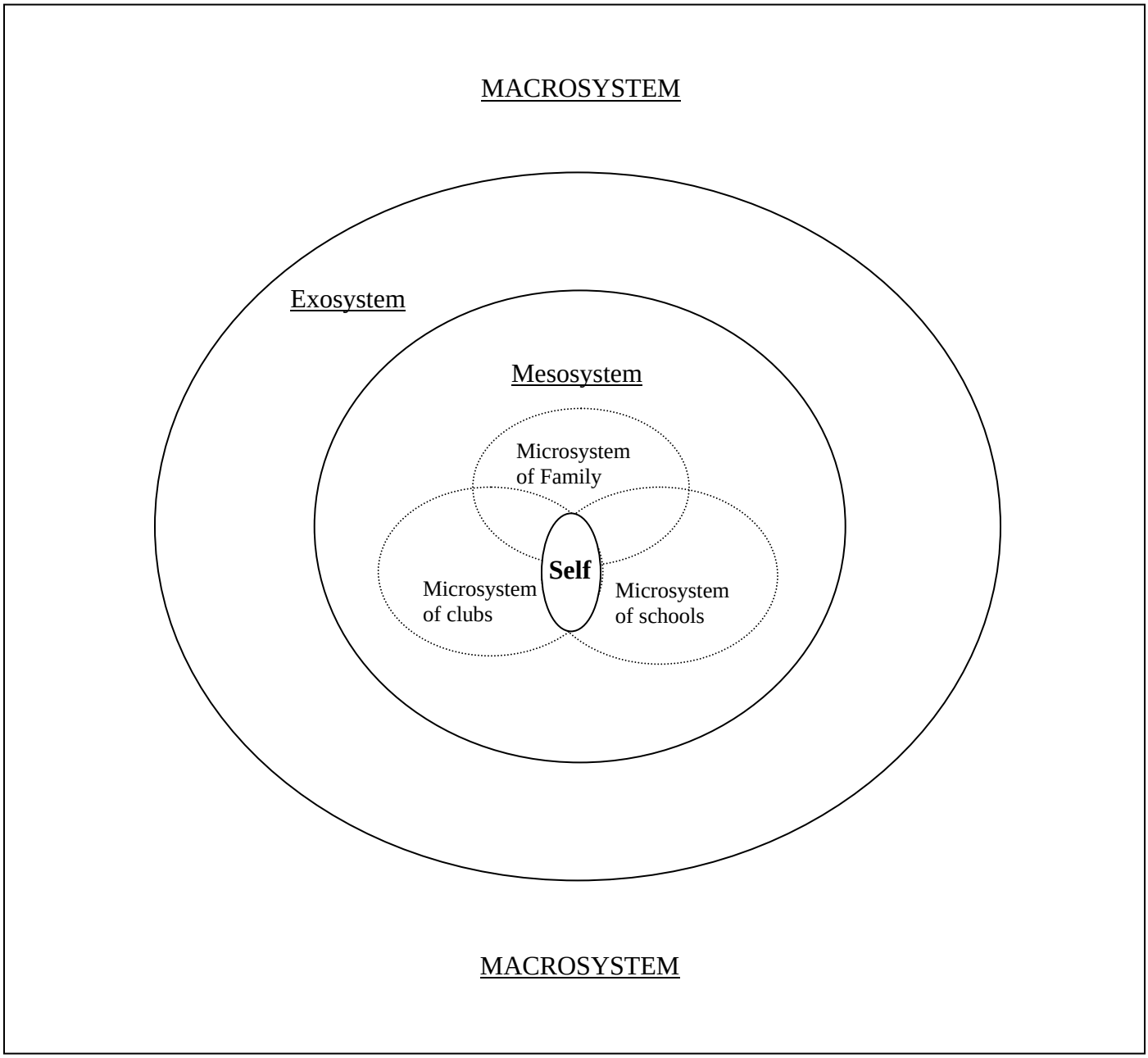
The ecological perspective is characterized by its comprehensive view of psychosocial and physical health. One feature of the Ecological Systems Theory is an equal focus on both the person and the environment. The researcher, by using this theory, draws attention to resources and characteristics of the individual that influence health.

More specifically, attention is given to aspects of the social environment that comprise a set of nested, interacting systems in which an individual engages (Bronfenbrenner, 1979). These interactions influence health beliefs and behaviors (Grzywacz & Fuqua, 2000). Bronfenbrenner's theory describes development as a lasting change in the way a person perceives and deals with their ecological environment.

Bronfenbrenner's Ecological Systems Theory

The research questions formulated for this study are addressed within the framework of Bronfenbrenner's Ecological Systems Theory (EST) (Appendix A). Bronfenbrenner's EST (Brofenbrenner, 1979) emphasizes the relationship of the adolescent's environment to their development and behavior (self). The adolescent is seen as a developing person who behaves according to external factors and influences. The external factors include family, peers, school (microsystems), family-to-school (mesosystem), community, societal factors (exosystems), and cultural and, global influences (macrosystem). Each of these systems are examined in an exploratory qualitative design using five focus groups of adolescents (n = 22) and dyad interviews with 4 African American adolescent girls and their mothers (n = 8). Both African American adolescent girls and boys were interviewed. Boys were included because they are part of the girls' microsystems, (e.g. a brother in the family, peers, classmates, or youth group members). Parents of adolescent girls were invited to take part in a portion of the dyad interviews to provide information about the home environment, and neighborhood resources and their influences on eating choices. This study focuses on the environmental influences on what adolescent girls choose to eat and how these decisions are made.

Bronfenbrenner's Ecological Systems Theory Conceptual Model



Bronfenbrenner's Ecological Systems Theory has been discussed in environmental health and psychosocial literature related to environmental influences on the developing person for over 25 years. Bronfenbrenner's EST has continued to focus on health promotion interventions that has emerged over the last 10 years (Grzywacz & Fuqua, 2000). Prior to explaining the relevance of the EST in the investigation of African American adolescent girls' eating choices, the theory will be reviewed.

Adolescent as Self

Bronfenbrenner's theory addresses the adolescent period (developing self). Adolescents experience biological and cognitive changes that take place as well as psychosocial tasks during this period; however, the effects of these changes on their health are not the same for all people or groups. The differences in the effects on health are due to the social environment in which the changes take place (Bronfenbrenner, 1979). These environments are discussed in this section.

Microsystem

The inner most environmental level is described as the immediate setting in which the developing individual has close intimate contact, or where reciprocal interactions between adolescent and parent or between adolescent and peer occur. This setting is a place where people can easily engage in face-to-face interactions and is called a microsystem. A microsystem is defined as "a pattern of activities, role, and interpersonal relations experienced by the developing person in a given setting with particular physical and material characteristics" (Bronfenbrenner, 1979, p.23). For example, adolescents' eating choices at home are influenced by the choices that parents model during their development (Neumark-Sztainer, Story, Ackard, Moe, & Perry, 2000b).

Mesosystem

The next level of the environment is the mesosystem. A mesosystem is the "interrelations among two or more settings [microsystems] in which the developing person actively participates" (Bronfenbrenner, 1979, p.25). Examples of this level and relationship would be among home and school, and among neighborhood peer group and family. Mesosystems involve two or more microsystems that contain the adolescent and some interactions between these two microsystems. For example, the adolescent is a member of a family (microsystem), as well as being a student in school (microsystem). Both of these microsystems place demands on the adolescent and will render sanctions or rewards for different choices. However, it is the interactions between school and family that form the mesosystem. Here is an example of an interaction between a friends' home eating environment and an adolescent girl's eating preference in her home: an adolescent girl has been requesting to stay for dinner with neighborhood friends and tells her parents that she does not want to eat dinner at home unless they have dinners like her friend's. This mesosystem interaction may impact on the parents eating if they make the changes that the girl wants.

Exosystem

The third environmental level is the exosystem. An exosystem refers to settings in which the developing person is not an active participant, but events occur that affect, or are affected by, what happens in the setting of the developing person (Bronfenbrenner, 1979). Examples of exosystems that may affect the developing adolescent include the parents' place of employment, a sibling's school class, parents' friends, activities of the local school board, and events in their community, as well as the geographical location of

food stores, neighborhood or city, in which they live. The effects of the external environment can be detected with examination of the influence of the parents' work environment on adolescent development (Bronfenbrenner & Ceci, 1994). For example, the parents' work environment may have poor choices of food. This may impact on parents' eating choices that can influence the home meals and the adolescent eating choices.

Macrosystem

The last level of the environment is the macrosystem. "The macrosystem refers to consistencies in the micro-, meso-, and exosystems that exist or could exist within a cultural or subcultural context along with belief systems or ideologies underlying the consistencies" (Bronfenbrenner, 1979, p. 26). An example of this system is the contrasts between cultural practices or beliefs. Contrasts may include the other systems, such as schools (micro), parks/clubs (meso), and parent's workplaces (exo-) in the US culture.

The macrosystem involves a phenomenon that takes place in all of the systems within a cultural context that provides a blueprint for development and behavior. If this blueprint is changed, then behavior can be changed. An example would be a change in eating choices in the family, school, or parents' work place that could lead to changes in African American adolescents' eating choices. For example, a grandmother that has hypertension comes to live with the family. The grandmother discusses her belief that pork causes high blood pressure and is concerned about the family eating pork. The mother's response to this belief is to omit pork from the family meals and lunches the children take to school. Based on the example, it is clear that Bronfenbrenner's

ecological systems theory offers a unique perspective to the study of African American adolescent girls' eating choices.

Bronfenbrenner's EST and African American Adolescent Girls' Eating Choices

Bronfenbrenner's ecological theory is used to help researchers understand the social environments' influence on eating choices of African American adolescent girls (Story, Neumark-Sztainer, & French, 2002). Bronfenbrenner's EST of human development attempts to view the adolescent outside of his or her context and treat the variables that were presumed to influence the behavior and development of youth as if they could be studied and understood in a "decontexualized" manner (Lerner & Castellino, 2002).

The theory guided the researcher in a more comprehensive examination of the health related factors that may occur in home, school, and community interactions which influence the African American adolescent girls' eating choice. The entire social environment shapes the biological, cognitive, and psychosocial changes of the adolescent by providing barriers, role models, and support for the adolescent during this development period (Bronfenbrenner & Ceci, 1994; Story, et al. 2002). Within this social environment are systems that include family, peers, schools, communities, and the larger society that offers a unique contribution to the African American adolescents' development and health.

Secondly, Bronfenbrenner's theory provided a wider and more holistic view of the environmental influences on African American adolescent girls' decisions and behaviors. Bronfenbrenner's theory allowed the researcher to seek data from many levels, therefore acquiring information that is unknown and would have been untapped if one were using a less comprehensive theory. In this research, information was obtained

from the systems (microsystem – home & peers; mesosystem – school or peer groups; exosystem – parent's environment and adolescent's environment; and macrosystem – cultural context) through focus groups and dyad interviews. These interviews took place in adolescents' homes, schools, youth clubs, and churches. The church setting added to the cultural context of the study due to it's salience in the African American community. Bronfenbrenner's theory is systematic in its approach to viewing environmental influences on African American adolescents by starting at proximal interactions (microsystems), then spanning out to distal interactions (mesosystems, exosystems).

Previous studies have described the effect of the family and school or microsystem influences on eating choices of African American adolescents (Croll, et al. 2001; Neumark-Sztainer, Story, Ackard, Moe & Perry, 2000a). The mesosystems of African American adolescents allows for the investigation of interactions between several settings (home, school, church, and neighborhood peer groups) on the girls' eating choices. These interrelationships provided a better understanding of how the influences from several developmental settings impact the African American adolescent girls' health behavior. Events in the exosystems of African American adolescents, such as policies of the school board related to lunches times, vending machine access, as well as parents' employment environments impact on the adolescents' eating choices (Bauer, Yang, & Austin, 2004).

Thirdly, Bronfenbrenner's ecological theory allows for cultural consideration of African American adolescents' eating choices. Examination of the macrosystem assisted this researcher in gaining a cultural perspective and highlighting cultural influences identified by low-income African American adolescent girls. Other macrosystem

influences include the impact of community SES and media on eating choices (USDHHS, 2000). Factors that contribute to these poor eating patterns include limitations in food choices, access to affordable and varied food sources, less income to purchase nutritious food, and cultural influences on food preferences (Morland, Wing & Roux, 2002). Insight into health disparities could highlight the need for development of interventions that meet the individualized needs of African American adolescent girls.

Lastly, Bronfenbrenner's EST can be used with qualitative research methods as well as quantitative approaches. This study's qualitative methods with focus group and dyad interviews were used to gather information pertaining to the different environmental systems that are influencing African American adolescent girls' eating choices.

Researchers who have used Bronfenbrenner's EST have been selective in which system to focus on (microsystem, mesosystem, exosystem or macrosystem). This may be due to limitations related to the use of the theory. These will be discussed later under study limitations. Despite these limitations, examination of these systems provided a comprehensive picture of the environmental influences on African American adolescent girls' eating choices and will be beneficial in tailoring an intervention to fit the needs of this population.

Research Questions

The research problem addressed in this study was to identify challenges that low-income African American adolescent girls face in making eating choices and to understand the process of how adolescent girls make decisions about eating. To address the gaps in the literature, the study answered 3 questions. The research questions designed for this study were:

1. What is the basic psychosocial process that low-income African American adolescent girls develop for making eating choices?
2. What are the macrosystem influences on low-income African American adolescent girls' eating choices?
3. How do low-income African American adolescent girls interpret the microsystem influences of family, peers, school, and church on their decision-making for eating choices?

Definitions of Theoretical Variables

This study used the following definitions of study variables:

1. Psychosocial process: a series of thoughtful operations that involves consideration of social conditions.
2. Eating behaviors: consist of patterns in the way an individual functions in relation to the act of eating food. This includes eating choices and food distribution among members of the family.
3. Eating choices: include decisions about food (whether they are healthy or unhealthy), food preparation (such as frying or baking), food consumption amount, availability of healthy food (influenced by family SES, residential geographical location), and cultural preferences.
4. Culture: a "set of beliefs, rules of behavior, and customary behaviors maintained, practiced, and transmitted" (Hahn, 1995, p. 42) in African American ethnic groups. These beliefs and rules provide a menu of options (choices) for behavior (D. Kahn, personal communication, Spring 2002) such as eating choices.

5. Socioeconomic status (SES): the state of adolescents, related to a combination of social (geographical location and resources in the environment) and economic factors (income and eligibility for free or reduced lunch).
6. Gender: self identified as girl or boy.
7. Adolescent: girls and boys between the ages of 13-18 years old.
8. Parent: biological mother or father responsible for care of adolescent.
9. Healthy eating: consumption of nutritious foods (quantities and preparation) that are conducive to well-being and meet recommended nutrient intakes according to the food guide pyramid (meats, fruit, vegetables, grains, dairy products) and United States Department of Health and Human Services.
10. Unhealthy eating: eating of foods in quantities and preparation, such as fried foods, junk foods, and fast foods eaten 3 or more times a week; fruit and vegetables intake of less than 2 per day that are not conducive to well-being, or in line with the food guide pyramid.

Assumptions

The research in this study surmised that studies that describe influences and barriers to adolescent healthy eating choices and behaviors have been conducted with a majority of the adolescents being Caucasian. A key assumption of this study was that influences and barriers to low-income African American adolescent girls' healthy eating choices are different from those of other adolescents. Another assumption was that African American adolescents would be able to identify cultural and socioeconomic influences on their eating choices. This researcher assumed that there would be data sufficient to formulate a theory of African American adolescent girls' eating choices

based on information provided by the participants. It was further assumed that African American adolescents would be able to participate in reflective interviews, and that African American adolescents have some control over their eating choices.

Limitations

This study has limitations because responses by the adolescents may be influenced by power imbalances. The researcher is an adult figure and some adolescents are constrained when talking with adults. Therefore, they may be hesitant to discuss their views. Alternately, a confident adolescent in the focus group can inhibit responses from other adolescents in the group. Strategies for reducing power imbalances are discussed in chapter 3 in the study procedures. Another limitation of the study has been that there were few studies in the literature using Bronfenbrenner's EST with African American adolescents. Researchers using Bronfenbrenner's EST to conduct a study of African American adolescent girls' eating choices, now, have a reference study in this area. In addition, the measurement of environmental influences is dynamic. Information received from African American adolescents has been based on their perspectives and may change over time as the adolescent develops (Lerner & Castellino, 2002). Finally, findings from small qualitative studies are not generalizable to other groups (Glaser & Strauss, 1967). Although the researcher has implemented strategies to address possible biases, this is always a concern.

Summary

Studies investigating factors, such as food consumption settings of home (parental involvement, parental choices, and food availability), school (peer influence, time, food availability), community (media, availability of healthy choices), socioeconomic status (hunger, cost, access, resource availability), and culture (taste preference, food appeal, cravings, traditions) in relation to eating choices have been limited within the last 12 years. In addition, research has not focused on several of these factors in one study. However, research findings have shown disparities across SES and racial or ethnic differences related to eating choices (Edmond et al., 2001; Neumark-Sztainer, Hannan, Story, Croll, & Perry, 2003; Pirouznia, 2001; Xie et al., 2003). Studies have included limited definitions of SES and have lacked a holistic perspective of eating choices. Based upon the importance of eating behaviors to disease prevention, there is a need to study the environmental influences on low-income African American adolescent girls' eating choices. Such studies would illuminate factors to be targeted with culturally appropriate interventions to address limited social and economic conditions that influence eating choices. Bronfenbrenner's Ecological System Theory was used as the framework in this study to provide new knowledge to the nutrition literature as well as test the theory's usefulness in obtaining a holistic view of the African American adolescent girls' eating choices.

In this chapter, the significance, problem statement, conceptual framework, assumptions, limitations and definition of terms were presented. In the next chapter, the literature is reviewed to identify gaps in the literature on adolescent eating choices.

CHAPTER II: REVIEW OF THE LITERATURE

The way in which adolescents make decisions about what to eat and what not to eat is not well understood. Therefore, the aim of this exploratory qualitative study was to identify the problems African American adolescent girls faced in making eating choices and to learn how they made decisions about eating. Bronfenbrenner's ecological systems theory provided a framework for understanding the adolescent as a developing person with individual preferences and perceptions, the microsystem of adolescents (home, school, and peers), the interactions among microsystem settings (mesosystem), as well as community and neighborhood socioeconomic status (exosystem), and cultural influences (macrosystem). Interactions within and between all of these system levels can influence African American adolescent girls' eating choices. Similarly, a theoretical perspective on adolescent decision-making provided another important context for understanding eating choices among African American adolescent girls.

Adolescent Eating Choices

This study focused on African American adolescent girls due to their increased vulnerability to poor nutrient intake when compared to other adolescent populations (USDHHS, 2000). Research reports have identified gender differences in general among adolescent eating choices. However, differences between African American girls' and boys' eating choices have not been clearly identified (Lytle et al., 2002; Neumark-Sztainer, Hannan, Story, Croll, & Perry, 2003; Pirouznia, 2001; Sweeney & Horishita, 2005).

In addition, few studies have investigated the effect of environmental and interpersonal influences, such as home and family, school and peers, community,

socioeconomic status, and culture on African American adolescent girls' eating choices (Hargreaves, Schlundt, Buchowski, 2002; James, 2004; Sherwood, Story, Neumark-Sztainer, Adkins, & Davis, 2003). The gaps in the literature on adolescent eating choices and decision-making shall be addressed in terms of (a) gender and ethnic differences, and then (b) within the context of the main constructs of the Ecological Systems Theory (EST).

Gender and Ethnicity

Although gender and ethnicity are investigated in a majority of the adolescent nutritional studies, several were grouped in this section to bring attention to the disparity in ethnic representation and gender differences presented in the literature. These findings were an impetus for the current study's focus on African American adolescent girls.

Several studies investigated food consumption of adolescents that highlighted gender differences (Croll, Neumark-Sztainer, & Story, 2001; Lytle et al., 2002; Neumark-Sztainer, Hannan, Story, Croll & Perry, 2003; Pirouznia, 2001). Overall findings indicate that males are increasing their caloric intake while adolescent females are decreasing their intake of calories. This decrease in calories results in a decrease in iron intake for adolescent girls and an inadequate amount of essential nutrients (USDHHS, 2000). In comparison, other studies reported no gender differences in eating behaviors. These studies are presented to identify the gaps related to gender and to display the under-representation of African American adolescents.

Croll, Neumark-Sztainer, and Story (2001) investigated perceptions of food and the importance of healthy food choices in a group of 203 adolescents in 7th-12th grade. The researchers used 25 focus groups with girls (n = 138) and boys (n = 65). One-half of

the sample was Caucasian, one-third African American, and the other adolescents were Asian, Hispanic, or Native American. Findings were separated into two broad categories, perceptions and importance. Adolescents described four primary perceptions about healthy eating that were categorized as food characteristics, situations, eating behaviors, and benefits and barriers. Food characteristics involved identification of types of food as either healthy, mostly fruits and vegetables, or unhealthy (e.g. chips, fast foods, pastries, pizza, and meats). Situations referred to locations, significant events, and settings, such as home (family meals) and special events, when foods were eaten. Eating behaviors were described as diet and food choices that promote healthy eating, such as less fat, limited junk foods, and limited caffeine intake. Barriers were identified as time, taste, appearance, and limited availability of healthy foods in restaurants. Boys and girls were in agreement about food taste, appearance of foods, and the lack of healthy food choices in areas where they are commonly eating, such as fast food restaurants. In fact, they saw these factors as barriers to making good eating choices. Overall, the adolescents stated that healthy eating was not important enough to change their eating behaviors. This attitude is of great concern if adolescents' general and future health is to be improved. Therefore, additional factors other than knowledge need to be explored.

Lytle et al. (2002) conducted a secondary data analysis of nutrient intake among adolescents (n = 1874) from the Child and Adolescent Trial for Cardiovascular Health (CATCH) study. The 3rd grade (n = 1874) data served as a baseline for follow up at grade 5 (n = 1360), and grade 8 (n = 1493). Data were collected using 24-hour dietary recalls for three collection cycles (1991-1992; 1993-1994; 1996-1997). The sample consisted of Caucasians (70%), African Americans (12%), Hispanics (14%), and others

(4%), and gender composition was equally divided for males and females. Findings documented that mean intakes of energy (calories, fat), sodium, calcium, and Vitamins A and D differed between males and females. Total energy intake (e.g. calories) was below recommended levels (except for 8th graders), however the percentage of energy from fats (31%) was above the recommended levels (e.g. < 30% of nutrients from fat) at all grades. Males' total energy intakes increased over time and females' intakes decreased over time (the percentage of fat intake for females decreased slightly). Sodium (3000 mg) increased to 3300 mg over time which exceeds the recommended level of 2400 mg. Calcium (1056-1134 mg), and vitamin A (623-1110 IU), intakes were below recommended levels (e.g. calcium = 1300mg; vitamin A = 800-1000 IU) for all grades and both genders, also iron (11-12.1mg) intakes were below recommended levels (15 mg) in females over time (Lytle et al., 2002). Lytle and collogues reported a trend related to gender differences of calories and fat intakes used for energy.

Pirouznia (2001) examined gender differences in nutrition knowledge and eating behaviors in middle school children (n = 532) in grades 6-8. The data were collected using a questionnaire to measure nutrition knowledge and eating behaviors. The knowledge portion of the questionnaire had a total score of 25 points, the higher the score the greater the child's knowledge. Results indicated that the mean nutrition knowledge scores were higher in girls (mean = 12.35) compared to boys (mean = 10.86). These low scores indicated that there is a need for education to improve nutrition knowledge. The eating behavior portion of the questionnaire, which included food choices, had a total score of 50 points with the higher score representing the desirable behavior. Girls had higher behavior scores (mean = 29.33) than boys (mean = 26.66) in the 7th and 8th grades.

These results indicate that girls had slightly more knowledge about nutrition and were making better choices. These findings are in opposition to Lytle et al.'s (2002) findings of lower calorie and nutrition intake reported by girls in the CATCH study. Both studies found gender differences; however the conflicting findings raise more questions.

Gender and ethnicity were also investigated in the home and school settings. Sweeney and Horishita (2005) conducted a study to describe the influence of home and school settings on the breakfast eating behaviors of 846 high school students, ages 13-19 years. The sample consisted of 50% girls (*n* = 421), 47% boys (*n* = 399) and 3% undisclosed (*n* = 26). Ethnic representation included: Hispanic (56.8%), African American (20.3%), Asian (15.8%), Caucasian (5.7%), and Filipino, Pacific Islander, and American Indian/Native Alaskan (less that 1%) adolescents. Results indicated that more girls (61%, *n* = 258) skipped breakfast than did boys (54%, *n* = 214). More boys reported eating breakfast at home (52%, *n* = 206) than at school (15%, *n* = 60). When breakfast was eaten milk, cereal, and orange juice were the reported foods consumed. More girls are not eating breakfast and are missing important nutrient intakes. Unhealthy behavior, such as skipping meals, can impact eating choices when the adolescent does decide to eat. For example, adolescents may consume greater amounts of food after skipping meals, also the quality of foods chosen will be related to reaching satiety quickly.

Shannon, Story, Fulkerson, and French (2002) examined factors that influence food choices in the school cafeteria of 294 high school students in grades 10 – 12. The sample consisted of 129 males (45%) and 158 females (55%) who responded to a survey. Students reported that taste (94.2% females, 93% males), cost (63.3% females, 83% males), availability (60.8% females, 27.1% males), and peer influence (67.5% females,

34.7% males) were important in their food choices. Gender differences indicated that cost was more important to males than females. Also, availability of low-fat foods in the school cafeteria and peer perception of low-fat foods influenced the females' food choices more so than the males' food choices. These findings emphasize the role that peer influences play in food choices made at school and the study identified factors that may affect eating choices, such as cost and taste.

Conway et al. (2002) investigated the components of middle school children's bag lunches. This study highlighted the interactions of the home availability of foods for lunches that are eaten in school with peers. The sample consisted of 1381 bag lunches for girls (62%) and boys (32%) in the 6^{th} to 8^{th} grades. Researchers described the sample composition as non-white. The components of the lunches were categorized by 10 food types. The analysis revealed a high frequency of lunches composed of high-fat food types such as: chips (83.1%), snacks, non-chips (68.9%), cookies (94.3%), and cake/pies (91%). Additionally, gender differences were evident with boys having higher cholesterol (37.2mg) and fat (6.8g) content than girls (29.7mg; 5.8g). These results are similar to the documented adolescent eating choices reported by the USDHHS (2000). In contrast, in a recent survey the American Heart Association (2006) reported an inverse association with girls having higher cholesterol intake than boys.

Neumark-Sztainer and colleagues (2004) explored associations between the practice of eating family meals and disordered eating, such as unhealthy weight control behaviors, binge eating, and chronic dieting among adolescents. Findings from adolescent girls revealed that frequent family meals and the family meal environment were associated with a decreased risk for engaging in unhealthy weight control behaviors.

For girls, the positive atmosphere of structured family meals was important in assisting with healthy eating; however for the boys this was not the case. Boys reported an inverse association with family meal frequency and family meal environment, meaning that these factors did not impact their risk of disordered eating. Gender perceptions of the importance of family meals were different.

Using data from Project E.A.T. (Eating Among Teens), Neumark-Sztainer, Hannan, and colleagues (2003) studied family meals and associations with gender, ethnicity, and food intakes among adolescents. The sample of 4,746 middle and high school students was composed of girls (50.2%) and boys (49.8%) who were categorized as Caucasian (48.5%), African American (19%), Asian American (19.2%), Hispanic (5.8%), Native American (3.5%), and other (3.9%) racial or ethnic groups. The frequency of family meals eaten during a week were reported as "never" (14%, n = 650); "1 or 2 times" (19.1%, n = 884); "3 or 4 times" (21.5%, n = 997); "5 or 6 times" (18.6%, n = 860); "7 to 8 times" (8.8%, n = 407); and "more than 7 times" (18.0%, n = 833). More girls (27.3%) than boys (26.3%) reported eating 7 or more times a week with family. Asian American youth reported eating 7 or more times (39.5%) with their families, while African American (25.7%) and Caucasian (22%) adolescents reported the lowest rates of family meals. Youth who reported eating with their family 7 or more times each week had a higher intake of vitamins (A, B-6, C, E), iron, folate and fiber. Caucasian and African American youths who were eating fewer family meals also had lower intakes of these important vitamins and minerals. In this study Caucasian adolescents have lower intakes of vitamins and minerals than African American

adolescents. However, the gender differences between African American girls and boys and Caucasian girls and boys were not highlighted.

Summary of Gaps in Studies on Gender Differences and Ethnic Under-representation

Although girls may have more knowledge about nutrition than their male peers, it is not reflected in their nutritional status. There are conflicting findings about the influence of gender related to nutrient intake and eating behaviors that include fast food consumption. Studies document the number of girls and boys and ethnicity make-up in the samples; however, the percentage is small and the numbers of African American adolescent girls and boys are not specified. This leaves the interpretations of the findings for African American youth to be questionable. The present study will be composed primarily of African American adolescent girls, with African American boys included to contribute their perceptions of the girls' eating choices. Additionally, inclusion of boys will provide information on their influences on adolescent girls eating choices.

Analyzing the Literature in the Context of EST

Bronfenbrenner's Ecological System's Theory (EST) is well-known related to the development of children, however it has been rarely identified as a theoretical framework in studies related to eating choices. In most cases, studies of Bronfenbrenner's EST limited the number of systems or constructs that were tested. This study attempts to address many of the EST's systems as a guide in identifying environmental influences of African American adolescent girls' eating choices. Studies of environmental influences on adolescent eating choices including the microsystems such as home and parents, school and peers, and the mesosystem interactions that take place between the microsystems are addressed. The exosystem influences of community SES and the

macrosystem influences of cultural food preferences on eating choices are presented. This review will begin with the central component of the theory which is the developing person. It is important to view the adolescent as a developing person with decision-making options. Adolescents are individuals with unique perceptions and expectations.

Adolescent as Self: Decision-Making

In several developmental arenas, researchers discuss the subject of decision-making. This section briefly explores some components of decision-making and choices as presented by a few key researchers. Several thoughts on decision-making date back over 30 years (Arroba, 1977; Erikson, 1968; Johnson, 1978; Piaget, 1969; Tallman & Gray, 1990). Tallman and Gray (1990) reference Etzioni who makes a distinction between choice, decision, and solving a problem. The term "choice" includes "sorting out options either conscious or unconscious and deliberate choices are decisions" (p. 423). However, others disagree with this definition and use these terms interchangeably.

Arroba (1977) suggests that decision-making occurs on a continuum ranging from passive behaviors to active behaviors. These behaviors are derived from the use of logic (objectivity, looking at the best alternative to solve the problem), no thought (decisions are made without objective consideration), hesitation (involving inability to make a commitment to a solution), emotions (based on likes and dislikes, choices are based on feelings), compliance (passive choice by going along with others' choices), and intuition (acting on an inner feeling of "rightness").

Johnson (1978) suggested that decision-making was a model to be used for gathering information (spontaneous and systematic) and analyzing information (internal and external). Spontaneous information gatherers react to the situation, make quick

choices and can just as quickly change their minds. They make a choice and continue to gather more information. This leads to changes as new information is obtained. In contrast, systematic information gatherers are cautious and obtain information before making a choice.

In light of the presented studies, decision-making is viewed as a complex process that takes place on a continuum. It is asserted in the present study that choice is not the same as decision-making, but that choice is the action or behavior that is the result of the decision-making process. Furthermore, adolescents are using a decision-making process in their eating choices that serves to meet their needs and that this process is impacted by environmental influences.

In order to focus on adolescent choices, it is important to look at the adolescent developmental process. During the adolescent period there are rapid physical and cognitive changes. According to Jean Piaget (1969), the adolescent progresses from focusing on the present and begin to focus on the future. The transition from childhood to early adolescence causes a shift in focus from parents as the primary influence to peers' influences. Progressively, the adolescent begins to make decisions based on his or her own judgment. According to Erikson (1968), this progression is key in the achievement of identity. Therefore, the development of the adolescents' ability to relate their behaviors to negative outcomes of the present and the future can lead to conflict. Recent research demonstrates that this conflict includes current adolescent choices and the association of those choices with potential illnesses.

Contento, Williams, Michela, and Franklin (2006) conducted a qualitative study using grounded theory to gain an understanding of adolescents' decision-making

processes that were used to make food choices. This key study addressed adolescent decision-making and food choices in relation to family and friends. The sample consisted of 108 adolescents, 11-18 years old recruited from 12 schools, with 47% Caucasian, 21% African American, 21% Latino-American, 9% Asian-American, and 2% classified as other. The sample was composed of 38% male and 62% female adolescents. Data were collected in individual interviews that consisted of two interview tasks. One task included a menu of typical foods available in the participants' schools. The participants were asked to choose a lunch that they would eat, and to describe why they made that choice. The second task asked them to describe the amount of control they believed they had over their food choices.

Results from task one identified several conflicting motives for each food choice. Sometimes the motive was "taste"; other times it was "habit" or "health." Contento and colleagues (2006) identified a process of cognitive self-regulation that adolescents used to resolve their conflicts in motives. This process allowed the adolescent to use decision-making rules (personal choice rules) to integrate food choices and align them with desired consequences. Results for the second task showed that the adolescents perceived they had a great deal of control over their food choices. The researchers acknowledged that these rules were influenced by the interactions of family and friends. This study highlighted the need to investigate adolescent decision-making and eating choices within an environmental framework and using qualitative methods.

Summary of Gaps in Adolescent Decision-Making

While many studies of adolescent decision-making have been conducted, there have been few studies of decisions adolescent use in making eating choices.

Additionally, the process adolescents use to make these decisions is not clearly understood. Adolescents' choices about foods and eating involve a complex process that may be embedded in culture, as well as environmental influences based on relationships and interactions (Contento el al., 2006). These choices are occurring during a period of rapid growth and maturation. However, their decisions about eating choices are frequently inadequate to meet these physiological demands and the resultant nutritional deficits may have long-term health consequences (Spear, 2002). Identification of the decision-making processes that take place in the context of environmental and interpersonal influences is necessary to impact the poor eating choices of adolescents. The current study focuses on the process adolescents use to make decisions about eating. Contento et al.'s study, using grounded theory, gives rise to the design of the current study's use of grounded theory to identify psychosocial processes used by African American adolescent girls in making eating choices. Also, the influences of environmental factors on eating choices are investigated in consideration of the adolescent's individual preferences, as well as their interactions with family, friends, and peers.

These interactions happen in environmental settings where eating takes place including the microsystem of home (parental practices), microsystem of school (peers' preferences), and exosystem of community (food availability, quality and accessibility; neighborhood food industry, cost, geographical location of neighborhood [SES]) (Conway et al., 2002; Gillman et al., 2000; James, 2004; Kubik, Lytle, Hannan, Perry, & Story, 2003; Morland, Wing, & Roux, 2002; Neumark-Sztainer et al., 2000, 2003, 2004; Shannon, Story, Fulkerson, & French, 2002; Sweeney & Horishita, 2005; Videon &

Manning, 2003; Zive et al., 2002). In addition, the macrosystem influences of culture including cultural food preferences, and taste or preferences will be reviewed.

Microsystem Influences on Adolescents' Eating Choices

Microsystem of Family

Adolescent development is more strongly influenced by interactions that are proximal to them than by interactions that are more distal to them (Bronfenbrenner, 1979). Interactions with parents and other family members in the home are the most proximal interactions the adolescent experiences. During familial interactions the adolescent's choices and behaviors are influenced in both positive and/or negative ways. These studies present findings that question the impact of the parental or family influences, however information from the parents were not included.

Videon and Manning (2003) investigated the influence of family meals on fruit, vegetable and dairy intakes of adolescents. The multiethnic sample consisted of 18,177 adolescents in grades 7 through 12, and included Caucasian, African American, Chinese, and Puerto Rican adolescents from the National Longitudinal Study of Adolescent Health (Add Health). Data were collected via home interviews of adolescent and at least one parent during the first collection period. Parental influence was measured by three factors: frequency of family meals, parents' presence at meals, and whether parents let adolescents make their own food choices. Findings indicated that parental presence in the home was not significantly related to the adolescents' fruit, vegetable, or dairy intakes. Adolescents' who made independent decisions about food were more likely to skip breakfast (1.06-1.46, $p < .01$) than those whose parents made decisions about foods eaten. An interesting pattern emerged in that adolescents who ate more than 3 family

meals per week were more likely to skip breakfast (0.54- 0.69; 0.42- 0.55, $p < .001$) and yet were more likely to have a better intake of fruit, vegetables, and dairy foods than those who ate 3 or less family meals.

Gillman et al. (2000) also supported the positive influence of family meals. The researchers examined the effects of eating family dinner and diet quality of fruit and vegetable intake among 8,677 girls and 7,525 boys, aged 9-14 years old. The data was collected via a self-report in the Nurses' Health Study II with a sample that was largely Caucasian (93%) adolescents. The data revealed that participants who ate family dinner every day consumed 0.8 more servings of fruits and vegetables and less trans fat and saturated fat than those who never or sometimes ate dinner with their families.

Neumark-Sztainer, Story, Ackard, Moe, and Perry (2000b) conducted 21 focus group interviews with 7th and 10th graders (n = 141) to identify family meal patterns and reasons for not eating with the family. The sample consisted of 40% Caucasian, 25% Asian American, 21% African American, 7% multiethnic, 6% Hispanic, and 1% Native American adolescents. The focus groups were held during a health education class. Data were sorted into the themes of (a) occurrence/frequency of family meals, (b) setting/activities during meals, (c) persons involved in family meals, (d) specific meals, and (e) rituals/expectations. Some adolescents reported that family meals occurred on a regular basis and were part of the daily routine. However, "many others" reported that their families do not have family meals on a regular basis. Reasons given for not having family meals included siblings leaving home, more individual freedom, parent's employment changed, changes in family relationships, or increases in individual social and school activities.

The settings where meals took place, such as fast food restaurants, kitchen table, living room, bedroom, and in front of the television were described as positive factors along with eating with extended family members (Neumark-Sztainer et al., 2000b). Special meals that occurred on holidays, birthdays, and at family gatherings were described as times when their favorite foods that reflected family traditions were prepared. Rituals and expectations for family meals involved daily breakfast or dinner or a specific time during the week when the family gathered for meals, such as on Sundays after church. The adolescents' perception about family meals and healthy eating was mixed. Participants stated that the foods at home were high in fat, not homemade, and lacking in fruits or vegetables. They also perceived that their peers were eating healthier meals than their families. Other participants stated that they ate healthier at home because healthier foods were readily available. Findings add support to the notion that the practice of eating family meals was related to healthier eating choices (Neumark-Sztainer et al.).

Summary of the Gaps in the Microsystem of Family

There is little information reported on the types of foods eaten at home or during family meals. Adolescents identified home cooked meals as healthier than fast food meals; however, some family meals consisted of foods similar to those consumed when eating out. The inclusion of fast foods or highly processed foods in the family meal can lead to a decrease in nutrient intake among adolescents.

The current study provides a perspective from adolescent girls related to the challenges that they face when making healthy eating choices. Furthermore, the study obtained the mothers' view of their daughters' and families' eating choices. Parental

influences are highlighted in association with the family meal environment and the adolescent girls' involvement in making decisions about food purchases and food preparation.

Microsystem of School

Adolescents spend a great deal of their time at school and with peers. The school setting and interactions with peers have an impact on the adolescents' and their families' eating choices. The extent of peer and school influences on the adolescent girls' eating choices are not clearly identified. Additionally, the mesosystem interactions between the microsystems of home and school among African American adolescent girls have not been addressed. These interactions can be identified by examining food choices in the home that are repeated when making food choices at school.

One study of school lunches included bag lunches, served lunches, as well as a la carte lunches, wherein Zive et al. (2002) examined sources of dietary fat of children in 24 middle schools. The sources of dietary fat were served lunches (42%), a la carte lunches (27%), and bag lunches (25%). Served lunches consisted of foods on the menu that did not allow for extra food choices. A la carte lunches consisted on numerous foods that allow several food choices. The a la carte purchases had a mean saturated fat content of 3.8 grams and total fat content of 13.1 grams from items such as desserts, fast food vendor items (pizza, chips/crackers), and fast food items prepared by the school. The served lunches provided by schools contained a mean saturated fat content of 9.5 grams and total fat content of 31.5 grams. The school setting is providing the middle school child with foods containing higher fat content than lunches from home. Although the home is seen as the primary setting of proximal influences and interactions on

adolescents' eating choices, the school setting also has great influence that may contend with those from the home.

Kubik, Lytle, Hannan, Perry, and Story (2003) examined the association of dietary eating choices and school environment, including vending machines and a la carte programs. The sample consisted of 7th graders from 16 schools (n = 598) who participated in 24-hour dietary recall interviews. The researchers describe the majority of the study participants as Caucasian (63%) and male (51%), but provided no other sample description. Schools with a la carte programs resulted in lower daily fruit and vegetable intake (3.39, p <.05) and higher fat intake (31.08, p < .05) than schools without a la carte programs (4.23; 28.49, p < .05) respectively. Schools without an a la carte program reported intakes of fruit and vegetables that met dietary recommendations of the United States Department of Agriculture. Snack vending machines were negatively related to total intake of fruits. As the number of vending machines increased in the schools, the adolescents' fruit intake decreased. Vending machines contain high fat and high calorie foods. The school food environment, including served lunches, a la carte lunches, and vending machines, may be fostering unhealthy eating choices. However, even when healthy foods are available, other factors are guiding adolescents' eating choices.

Summary of Gaps in the Microsystem of School

Factors that are guiding adolescent food choices are not clear. Adolescents are consuming foods at school that are similar to the type of foods consumed at home. This is evident in the lunches that they are bringing to school. Lunches brought from home consist of processed meats, pre-packaged foods and pre-prepared foods. These types of

foods are also available for purchase at school through vending machines and a la carte menus.

The present study describes a basic psychosocial process low-income African American adolescent girls' use in making eating choices. This study highlights the foods that are available in the school environment and solicited information about how the adolescents maneuver through the various meal options available in the cafeteria and vending machines. This information can be beneficial in assisting adolescent girls in developing strategies to make healthy eating choices at school.

Exosystem Influences on Adolescents' Eating Choices

Adolescents are eating outside of the home and school. They are patronizing restaurants and fast food eating places. Foods that are purchased for the home are influenced by family socioeconomic status (SES) and availability and quality of foods in neighborhood grocery stores. These additional settings in the community are of interest when examining adolescents' eating choices.

Studies have estimated or defined SES as income, educational level and other compositions of these factors, however the definitions are varied and limited. These definitions are relying on individual or family-level data and therefore overlook the residential geographical location and resources available in the community. In this study, SES is viewed as an environmental factor that is comprised of two components: The first SES is the family's personal resources and the second SES involves the neighborhood resources. The family SES includes family income and household size leading to eligibility for free or reduced lunches. Neighborhood SES (geographical location) includes access to and availability of adequate neighborhood resources.

The majority of African American adolescents and their families are living with inadequate economic and environmental resources (USDHHS, 2000). Such resource limitations place adolescents at high risk for inadequate nutritional intake. Socioeconomic status (SES) has been recognized as influential to health promotion behaviors that lead to chronic diseases (e.g., heart disease, hypertension, and diabetes) in African Americans (Morland, Wing, & Roux, 2002; Ruzek, 1997). For example, eating choices of these adolescents and their families generally include intake of foods that will meet their hunger needs, such as starches, fats, and sugars. These food types are sometimes called "staple foods" because they will provide a feeling of fullness and they cost less than fruits and vegetables. The eating choices of adolescents with low SES are different from those adolescents with higher SES, due to differential access to adequate resources, as well as cost concerns (USDHHS, 2000).

Family SES Effect on Eating Choices

Neumark-Sztainer, Wall, Perry & Story (2003) examined factors that correlate with fruit and vegetable intake in 3957 adolescents with a mean age of 14.9 years. The sample was 48.5% Caucasian, 19% African American, 19.2% Asian American, 5.8% Hispanic, 3.5% Native American, and 3.9% others. SES was a composite variable of parent education level, eligibility for public assistance, eligibility for free or reduced school meals, and parental employment status. The researchers did not report ethnic differences related to SES and eating behaviors. The results revealed that SES along with 11 other personal and behavioral factors accounted for 13% of the variance in the factor analysis model that was not significant among adolescents. Therefore, the researchers

could not find influences of SES on fruit and vegetable intake among the ethnic groups of adolescents.

Neumark-Sztainer and colleagues (2003) also examined associations of family meal pattern, parent employment, and socioeconomic status (SES). Middle school students reported more family meals (5.4 per week) than high school students (3.9 per week. Students whose parents were not employed had higher frequency of family meals (4.9 per week) and students whose parents who were employed full-time had the lowest frequency of family meals (4.2 per week). Families with higher SES had more family meals (4.9 per week) than those with lower SES (4.2 per week). Again, as the frequency of family meals increased, so did the adolescents' intake of calcium, iron, Vitamin A, Vitamin C, Vitamin E, Vitamin B-6, folate, and fiber. These findings suggest that low-income African American adolescents in high school whose parents are employed full-time may be having fewer family meals and, therefore, are at risk for poorer nutrition. However, Neumark-Sztainer et al. did not study the hours when the parents worked (e.g. nights, evenings, or daytime) which could have a differential influence on adolescents' eating choices. The need for parents to work will not change, therefore, strategies must target the adolescent's decision about eating choices, whether parents are present at mealtimes or not.

In contrast, Xie et al. (2003) measured SES by 3 categories of family income (<$15,000; $15-49,999; >$50,000). Differences in SES were reported and the researchers concluded that the higher income group met the recommendation of dairy products intake. Added sugar intake was increased in lower income groups, whereas polyunsaturated fat, protein, folate, calcium and iron were increased in the higher family

SES group. These findings suggest that the higher the adolescents' family income the better their eating choices. Conversely, adolescents whose family income was lower had poorer eating choices. In this study, SES had a positive directional influence on eating choices.

Edmond et al. (2001) examined fruit, juice, and vegetable (FJV) intakes of African American adolescent boys (n = 172) and found a negative association between median family income and FJV availability in the home. Income groups of $15 - $49,999 were less likely to have FJV in their homes than groups that had lower or higher incomes. This is in contrast to Xie et al's. (2003) findings that higher income (SES) was associated with higher nutrient intake and better eating choices. Both Xie et al. and Edmond et al.'s findings conflict with those of Neumark-Sztainer, Hannan, et al. (2003), who found no association or influence of SES on eating behaviors. However, these results may be confounded by the researchers' choices of different measurements of SES. These researchers had varied composites of economic factors to define SES: family income, parental education, eligibility for assistance, and parental employment. However, social factors such as neighborhood location and resources were not included.

Neighborhood SES Effect on Eating Choices

Factors that contribute to poor eating choices of low SES families include limitations in food choices and access to affordable and varied food sources in the neighborhood as well as less income to purchase nutritious foods (Morland, Wing, & Roux, 2002). Additionally, the type of foods purchased by African American parents such as beans, poultry, canned vegetables, and canned meats are less expensive than fresh fruits and vegetables, lean cuts of meat, and fish. Foods recommended for healthy eating

are often very expensive or unavailable in good quality in low SES areas. Therefore, geographical location or neighborhood SES may affect the African American adolescent's ability to make healthy food choices, due to cost, food selection (availability of nutritious foods) or food preferences (Morland,Wing, & Roux). A further view of African American neighborhood resources and the effects of these resources on adolescents' nutrient intake have been discussed in the literature.

Neighborhood resources. Kimberly Morland and colleagues (2002) found differences in the type of food stores, food location, and neighborhood wealth. The researchers stated that income is a measurement of individual wealth; therefore, home values would serve as an estimate of neighborhood environmental wealth. Wealthier neighborhoods had three times as many supermarkets than low wealth areas. However, more fast food restaurants were located in the low-medium and medium wealth neighborhoods with their numbers decreasing in the high wealth areas. Fewer small grocery stores and gas stations with stores were located in predominately Caucasian neighborhoods. African American neighborhoods that were low in environmental resources had limited access to food stores, such as supermarkets that have a variety of fruit, vegetables, and meats that were readily available in neighborhoods of higher wealth that are predominately Caucasian.

Morland, Wing, Roux, and Poole (2002) further examined the distribution of food stores and food service places by neighborhood wealth and ethnic make-up or racial segregation in a multi-state sample. Median house values in each census tract were used to measure neighborhood wealth and the proportion of African American residents in a census tract was used to measure racial segregation. Two hundred twenty-one census

tracts defined in 1990 census were used as a measure of neighborhoods in Mississippi (56), North Carolina (78), Maryland (28), and Minnesota (54). A total of 3,341 businesses were identified as places where food purchases could be made. These researchers' definitions of food stores were: supermarkets including a full-line grocers (carry groceries, meats, and produce); super centers with large selling areas and an expanded selection of non-food products; wholesale clubs that require membership (offer varied selection but limited product variety), and were associated with a national or regional chain. Specialty stores included fruit and vegetable markets and meat markets, limited-assortment stores included low-priced grocers that provide a limited number of items (including none or few perishables), independent grocers included full-line grocers not affiliated with a chain, and carryout eating places that sold food but were not franchised. Results indicated that as the neighborhood wealth decreased the proportion of African American residents increased. Neighborhood wealth was categorized as "low," (0.53 percent, *n* = 2772, SD = 1147) "low-medium," (0.36, *n* = 3745, SD = 1148) "medium," (0.18 percent, *n* = 4280, SD = 1609) "high-medium," (0.13, *n* = 3868, SD = 1762) and "high." (0.06, *n* = 4224, SD = 1613). Additionally, the proportion of households without a car or truck available was higher among African American neighborhoods, regardless of wealth. Limited transportation can further affect the access to higher quality of foods.

Likewise, Zenk et al. (2005b) investigated neighborhood racial composition, poverty level, and accessibility of supermarket in tri-county metropolitan Detroit using the 2000 census tract data. Findings showed racial disparities in supermarket accessibility with the most impoverished areas populated by African Americans. The nearest

supermarket was, on average, 11 miles further away from the neighborhood than the most impoverished Caucasian neighborhood. This study adds support to Morland, Wing, and Roux's (2002) findings, further highlighting the concern related to inadequate accessibility to food places that could provide nutritious food choices.

Additionally, Zenk and colleagues (2005a) examined neighborhood geographical location of food stores where African Americans shop and their fruit and vegetable intake. The purpose of the study was to investigate store characteristics, such as store type (supermarket, specialty stores, independent grocer, limited assortment stores), store location (suburb or city), and perception of selection, quality and affordability of fresh produce. The study was conducted in a community that was 97% African American and 35% of the households were below the poverty level for 2000. Data in an earlier observational study found that the neighborhood included 13 independent grocers (9 large and 4 small), no large supermarket chain, and 93 liquor stores for $\geq$ 90,000 residents (Zenk, Schultz, Isreal, et al., 2005b). Also, the quality of fresh produce for sale was poorer in this neighborhood. This neighborhood was compared to a nearby middle income neighborhood with African Americans and Caucasians which had 19 grocery stores (including 8 chain supermarkets), and only 18 liquor stores for 78,000 residents. The sample consisting of 266 African American women, with a mean age of 49 years old was drawn from the low-income neighborhood. Findings showed that higher income was associated with shopping at a supermarket versus other grocers ($p < 0.05$) in the low-income neighborhood. Families with incomes that were below poverty level were less likely to shop at supermarkets (full-line grocers, super centers and wholesale clubs) that have a full range of groceries, meats and fresh produce. Also, surburban store location

was associated with higher ratings of selection/quality ($p < 0.001$) but not affordability. Additionally, ratings of selection-quality tended to be higher among supermarket shoppers than other store shoppers. Finally, women shopping at supermarkets and specialty stores consumed fruit and vegetables 1.22 and 2.37 more times daily than those shopping at independent grocery stores. Findings from this study suggest that low income African American neighborhoods have poorer access to supermarkets which may impact on their fruit and vegetable intake. Although income plays a part in food purchases, these findings show that geographical location can have a positive or negative impact on access and availability of quality foods (Zenk, et al., 2005a).

Effects on nutrient intake. French, Story, Neumark-Sztainer, Fulkerson, and Hannan (2001) examined the frequency of fast food restaurants use in association with adolescents' nutrient intake and food choices. Using data from the Project E.A.T. study, results indicated that greater than 75% of the adolescents reported eating at fast food restaurants within the last week. The group using fast food restaurants 3 or more times within the past week were 9-12th grade non-white males (26.4%) followed by non-white females (26.0%). Eating at fast food restaurants contributed to higher intakes by boys than girls for fat (81.3 g; 71.5 g), fiber (23.5 g; 22.3 g), calcium (1115.1 mg; 966.6 mg), vitamin A (7626.5IU; 7236.9 IU), vitamin C (141.7 mg; 139.7 mg), and sodium (2635.0 mg; 2306.9 mg). Never eating at fast food restaurants was associated with home availability of healthy foods, however, no gender differences were noted in this group. These findings indicate that although boys are eating in fast food restaurants more often than girls, they were also consuming higher portions of good (e.g. fiber, calcium, vitamins) and bad (e.g. fats, sodium) nutrients than were girls.

Nielsen, Siega-Riz, and Popkin (2002) investigated trends in total energy intake by food locations and food types among a nationally represented sample of 16,810 adolescents (12-18 years old) and young adults (18-29 years old). Only results related to adolescents during 1994-1996 (n = 1322) will be discussed. The sample of adolescents was composed of 51.0% male, 67.2% non-Hispanic whites, 15.3% non-Hispanic black, 12.8% Hispanic, and 4.8% other. Total energy in kilocalories (kcal) intake increased by 208 kcal (from 2060-2268 kcal), and kcal from meals increased by 17 kcal (from 1780-1797 kcal), however increases in kcal from snacks was significant by 68% (from 280 to 471 kcal). Snacks from vending machines increased from 1.7% of energy intake to 2.3%, while energy intake from snacks at home decreased by 11.6%. Snacks eaten out at a store increased from 8.0 % to 10.5 %, and snacks from fast food restaurants increased from 8.2 to 10.9; however snacks at school remained about the same (1.8%). Other sources of snacks (such as gifts from friends) increased from 4.0 % to 9.7 % (more than double). Meals from vending machines remained about the same (0.5 %); meals eaten at home decreased from 73.8 % to 59.3 %; meals eaten out at a store decreased slightly by 1% (4.9% to 3.9%); however meals eaten at fast food restaurants increased from 6.2 to 21.5%, more than tripling energy intake from this source. Percent of energy intake from meals at school decreased from 12.4 % to 9.5 %, and meals eaten from other sources increased from 2.4% to 5.3 %. Adolescents were getting more of their energy intake from snacks in vending machines, eating out at stores, fast food restaurants, and other sources while energy intakes in the home were declining.

Summary of Gaps in Exosystem

Income may be an economic factor, but social factors included in SES have not been addressed. Exosystem influences include the ability of the family (family SES) to purchase nutritious foods as well as the availability of quality foods in the neighborhood (neighborhood SES). Studies of SES need to address more than income as neighborhood SES involves environmental resources in the areas that are accessible or inaccessible to the African American adolescents. In the reviewed studies, SES was operationally defined as family income, mother's educational attainment, household income and family size, poverty level, or a composite of these (Edmonds et al., 2001; Neumark-Sztainer, Wall, et al., 2003; Xie et al., 2003). Income as a proxy for SES had significant results in the mentioned studies, but categories of income were collapsed and may have influenced the findings.

The current study will focus on low-income adolescent girls to explore the role of SES on their eating choices. Low-income was defined by eligibility for free or reduced meals. Also, geographical location of large grocery stores, food availability, and food quality were identified. These factors are highlighted based on their influence on African American adolescent girls' eating choices in the current study.

Macrosystem Cultural Influences on Adolescents' Eating Choices

Several studies have explored the influence of gender on African American adolescent girls' nutrient intake, nutritional knowledge, and eating choices. However, these investigations have not included the role of culture in the eating choices of African American adolescent girls (USDHHS, 2000). Culture is not equivalent to ethnicity or race, although ethnicity is a component of culture (D. Kahn, personal communication,

Spring 2002). Race is a sociopolitical construct of categorization that commonly denotes presumed biological differences (Hahn, 1995). According to Hahn, there are few biologically distinguishing markers between people who are "black" and those who are "white." Therefore ethnicity serves as a more accurate term because it describes ways people classify themselves "socially, culturally, and historically" (Hahn, p. 113-114). Race is mentioned only when the researcher identifies the term, otherwise ethnicity is used.

Culture and Eating Choices

Discussions of culture and eating behaviors among African American adolescents are cited in the psychosocial literature as "disturbed eating behaviors and eating disorders" (Barry & Grilo, 2002; Johnson, Rohan, & Kirk, 2002; White, Kohlmaier, Varnado-Sullivan, & Williamson, 2003; Wildes & Emery, 2001). These studies discussed culture and eating behaviors related to a "culture-bound syndrome" referring to disturbed eating behaviors or eating disorders. This reference has been made because culture appears to play a significant role in the development of problems in eating behaviors (Wildes & Emery).

The role of culture identified in past psychosocial literature has suggested that problems in eating behaviors are less common among African American adolescents in Western environments than among Caucasians. Past literature cited differences between ethnic or racial groups as proof that cultural ideals, within the African American culture, influence attitudes toward the body and food. However, no conclusive findings exist related to problems in eating behaviors and ethnic differences, so culture was given as the explanation (Wildes & Emery, 2001). Conclusions from the conflicting psychosocial

literature discussing eating behaviors seem to suggest that culture may be a protective factor for African American adolescents exhibiting certain eating behaviors. Whereas, the health promotion literature seems to view culture as a risk factor in African American adolescents' eating behaviors. However, these viewpoints cannot clearly be investigated unless culture is defined in studies that focus on eating and nutrition programs.

African American adolescents' eating choices are influenced by their ethnic culture as well as the general American culture. Both impact on food selection, preparation, attitudes, and social interactions associated with food.

Most adolescents consume diets that are higher in fat and lower in essential nutrients. The influences of the general American culture are associated with eating choices that include junk food consumption and eating away from home at fast food places. These influences are becoming more common (Morland, Wing & Roux, 2002; Xie et al., 2003). Fast food or junk food consumption takes place in eating locations where there is self-service or carry out foods without waiter services. These foods tend to be higher in fat, sodium, and calories. Continual consumption of these foods can lead to increased obesity prevalence among African American adolescents (Morland, Wing & Roux, 2002). Cultural eating choices are difficult to change, even if these eating choices lead to malnutrition by not providing adequate nutrients (Helman, 2000). Traditionally, food selections are made by the mother and are based upon several factors including eating behaviors established during childhood within the African American culture (Hudson & Stern, 2000). Food selection also consists of purchasing canned foods and packaged foods which are high in sodium (Hudson & Stern). The status of these

traditional roles related to food selection and purchase warrants investigation to determine whether they are still practiced.

Cultural Food Preferences

Eating behaviors among African American adolescents must be studied in the context of their cultural meaning. James (2004) in a qualitative study explored how cultural and community factors influence attitudes about food choices and dietary intake among African Americans. Findings highlighted the role of women in maintaining nutrition for the family. Women are seen as being more interested in improving their health than men. Therefore, interventions that focus primarily on women may lead to greater improvements in the family's eating choices.

A study by Hargreaves, Schlundt, and Buchowski (2002) discussed several contextual factors influencing eating choices, however, food preferences will be discussed in this section. In a focus group with 40 African American women, responses about food preference had 43 statements about foods that the participants usually enjoyed. Several participants preferred to eat healthy foods such as fruits, vegetables, and lean meats (13 statements). Others preferred unhealthy foods such as sweets, cakes at least three times a day (9 statements). Some preferred meat and potatoes as meals (10 statements), and few preferred convenience foods such as frozen foods and snack foods (3 statements). Also, some participants were not picky about food and would try different types of food such as Chinese, Mexican, and Italian (2 statements). Three important food preferences that were indicated were preferences for high fat foods and sweets, a reliance on convenience foods, and meats and potatoes (starches) in meals. The

meats used in meals, in addition to their fat content, were also used as flavoring and seasoning of foods: Therefore, meats are consumed in almost every meal.

Likewise, Sherwood, Story, Neumark-Sztainer, Adkins, and Davis (2003) developed and tested a sorting technique for assessing food preferences and patterns in 96 African American girls, ages 8-10 years. The 64 food cards included fruits, vegetables, dairy products, snack foods, meats, and sweetened beverages. Each individual card had a picture of 1-3 food items labeled with their names. Participants sorted the food cards into piles that represented their intake, such as "I never had it," "I like it a lot," "I like it a little," or "I don't like it." The food/beverages cards were sorted into piles, such as, "every day," "usual," sometimes," and "never or very rarely." According to the results, the most preferred foods and beverages were fruit drinks, grapes, ice cream, cookies, and pancakes (96% - 91%). The most preferred high-sugar and /or high fat foods and beverages reported were ice cream, cookies, candy, chips, fast food (pizza, and French fries), fruit drinks, sport drinks, and chocolate milk. The least preferred foods and beverages were green peas (52%), beans (40%), greens (38%), cabbage, coleslaw (36%), and broccoli (33%). Vegetables (green vegetables) and lower-fat snacks (pretzels, and yogurt) were the least preferred. The most preferred healthy foods were grapes, oranges, corn, and cold cereal. In general, African American girls preferred high-sugar and high fat foods over fruit and vegetables.

This is of great concern, if these girls are making eating choices based on these food preferences. Also, "the when, where, and how" these choices are made would be important to understand. The role of family cultural traditions and the impact of the larger culture on these food preferences must be explored.

Cultural Media Influences

Media messages about food and eating behavior are prevalent. Tirodkar and Jain (2003) examined food messages on African American television shows. The researchers videotaped the 4 most watched situation comedy television shows among the general population and the African American population identified by the Nielsen ratings. African American prime time shows contained more food commercials (4.8 per half-hour show vs. 2.9; $t = 2.73$; $p < .01$) than general prime time shows. Specifically, food commercials during African American prime time television shows included more soda (13% vs. 2%), candy, chocolate (30% vs. 14%), and less breads, grains (6% vs. 12%). The television media are sending negative messages to African Americans focusing on foods that are not healthy, especially since soda and chocolate candy intake needs to be reduced and bread and grains need to be increased in the African American diet. However, these food preferences are representative of documented African American eating choices and food intake. Tirodkar and Jain (2003) findings further emphasize the influence of cultural media messages and different eating settings on African American adolescent eating choices.

Summary of Gaps in Macrosystem

Nutrition programs for low-income African American adolescents have been designed without the benefit of input from participants about specific cultural aspects of food preferences, barriers, and meanings of eating choices. While studies discussed ethnic differences, few had adequate representation of African American adolescents. Sample ethnic differences were used as proxies for culture.

When designing intervention studies, food preferences of African American girls must be considered, along with the traditional African American cuisine, which is low in fiber, but high in sodium, sugars, fat, and cholesterol (James, 2004). Participant input about the meanings of healthy eating will provide understanding of the concerns and viewpoints of this cultural group. Awareness of cultural perspectives is vital if interventions are to be successful in changing eating behaviors can occur (Shatenstein & Ghadirian, 1998).

In addition, messages about foods and eating choices are prevalent in the African American media that are being viewed by African American adolescent girls. Studies are needed that address the relationships between media messages and adolescents' eating choices.

In the current study's sample, adolescent girls are the representative majority. Cultural influences on adolescents' eating choices are addressed from the girls' and their mother's viewpoint. The mothers' role in food selection and purchases are discussed. Also, the African American media influences are identified. This yielded information about cultural influences from the participants themselves. Researchers can use this information to design a culturally appropriate nutrition program for this at-risk group.

Summary

Past studies have addressed adolescent eating choices and a few studies have reported on gender and ethnic differences, yet findings have been mixed. Furthermore, few studies have examined environmental influences on eating choices of African American adolescent girls. The home setting continues to be important because of parental presence and structured family meals (microsystem) and adolescent girls seem to

benefit more from these family interactions than do adolescent boys. The school setting (microsystem) offers a unique challenge for adolescents because of the availability of unhealthy food choices in vending machines, a la carte meals, and served lunches that have high fat, high caloric, and high sodium content. Adolescents are also eating at fast food restaurants and local grocery stores in their communities as they interact with friends and peers. These settings for food choices are associated with poor nutrient intakes for the adolescent. Therefore, this study was needed to obtain information directly from African American adolescent girls that can be valuable in planning future interventions.

Likewise, SES has been frequently measured as either an individual-level or family-level variable such as family income, mother's educational attainment, household income and family size, poverty level (Edmonds et al., 2001; Neumark-Sztainer, Wall, et al., 2003; Xie et al., 2003). However, in the current study community SES has been examined to understand the implications of this exosystem influence on health choices and behaviors. Appropriate measures of SES need to be tested in research. Income may be more representative of SES than educational levels because income is a more dynamic measure of changing family resources. Alternately, SES may include a combination of social (community) and economic factors (family) which have not yet been identified.

Another factor that has a strong influence on food choices is cultural food preferences (macrosystem). Traditional cultural eating behaviors are passed from parents to children and influence the adolescents' food selections and preferences. Eating behaviors are influenced by the individual's environment, which includes social, economic, and cultural factors that may affect health outcomes. Eating choices have

cultural connotations and are deeply embedded in the traditions that are unique to that culture (Counihan & Van Esterik, 1997; Shatenstein & Ghadirian, 1998). However, there have been few studies investigating culture, SES, and eating behaviors within the last 12 years. Studies have mostly focused on disturbed eating behaviors and ethnicity (Barry & Grilo, 2002; Johnson, Rohan & Kirk, 2002; White et al., 2003; Wildes & Emery, 2001). In many studies, ethnicity was used as a proxy for culture. Additional research is needed to focus on the ecological environmental influences to obtain a clearer picture of factors that can impact on the eating choices of low-income African American adolescent girls.

The current study may yield information that can contribute to the *Healthy People 2010* goal to promote health and reduce chronic diseases associated with diet and weight. The results of the current study will guide the development of a future intervention program for African American adolescents to improve eating choices.

CHAPTER III: METHODOLOGY

The purpose of this qualitative grounded theory study was to identify the problems that low-income African American adolescent girls face in making eating choices and to learn how they make decisions about eating. The research design, sample, protection of human subjects, data collection, and data analysis are discussed in this chapter. Prior to discussion of these components, the foundation of grounded theory qualitative approach will be presented.

Grounded Theory

Grounded theory is one of the major interpretive or qualitative research approaches utilized by nurse researchers (Crotty, 1998). Grounded theory can be viewed as a specific form of ethnographic inquiry that the researcher applies through a series of carefully planned steps to develop theoretical ideas. It is a "process of inductive theory building based on observation of the data" (Crotty, p. 78).

Symbolic interactionism is the theoretical foundation for grounded theory. It focuses on meanings of phenomena or situations to a group of people in their natural or daily settings (Chenitz & Swanson, 1986). Symbolic interactionism also asserts that behavior is guided by meanings and beliefs held. These meanings provide avenues of learning which impact on behaviors.

Grounded theory research method was developed from symbolic interactionism principles to discover theories that will aid the researcher in understanding human behavior in the real world (Chenitz & Swanson, 1986). Grounded theory is a method of theoretical "discovery that is systematically derived from the data" that is obtained (Strauss & Corbin, 1990, p. 23). Grounded theory emphasizes objectivity, systematic

rigor and thoroughness in design, data collection and analysis (Strauss & Corbin). Grounded theory procedures are constructed to yield a theory that explains the basic psychosocial processes people create as they respond to problems, concerns, or stressors (Chenitz & Swanson, 1986). Grounded theory begins with the researcher "knowing nothing" and leads to theory generation on a substantive area, with the researcher "knowing that" (Jeon, 2004, p. 250). This method is appropriate for use in the investigation of this phenomenon because of its emphasis on objectivity of the researcher to obtain the attitudes and beliefs of a group. The methodology provides the researcher with rules for every stage of the research process, as well as a framework consisting of coding procedures design to provide standardization and rigor to the analysis process (Strauss & Corbin). Grounded theory is best used in "areas where little research has been conducted" (Chenitz & Swanson, p. 7). Eating choices have been investigated in terms of consumption patterns of food groups and nutrients. However, few studies have been conducted using qualitative methods to obtain perspectives from low-income African American adolescent girls. Grounded theory can generate explanatory propositions related to real world phenomena in order to design a culturally appropriate intervention that will promote healthy eating choices.

Grounded theory focuses on social processes (Cohen, Kahn, & Steeves, 2000) that impact on the experiences, attitudes and meanings in the lives of groups of people. This method is well-suited to an investigation of low-income African American girls' eating choices eating choices because this approach enables the researcher to explain why these adolescents eat the way they eat. Many factors have been purported to contribute to the eating choices of African American adolescent girls. These factors are contextual in

nature and must be examined in that light. Grounded theory lends itself to the researcher documenting the influence of contextual environments, such as settings and interactions on the emerging psychosocial process.

This study was conducted in four settings (community, school, church and home) with three different cohorts of adolescents in public school, church, and boys and girls club. These different cohorts provided multiple sources of data. A wide range of data sources have been used in grounded theory studies, such as observations, interviews, and analyzing archival data such as journals, diaries, and newspapers. These different data sources help the researcher in understanding the substantive focus of the research, provide descriptive analysis, and assist in providing context to the research (Glaser & Strauss, 1967). Focus groups, as an additional data source to dyad interviews, were useful in accomplishing these goals.

Additionally, grounded theory uses constant comparative method of data analysis through making comparisons as the data are obtained. This made it possible to check categories of coded data for consistency across focus group and dyad interviews. The category labels were words and concepts from the participants themselves. The data was analyzed to determine relationships between categories. These relationships revealed "patterns of interrelationships of a developing theory" (Glaser & Strauss, p. 101).

Research Design

This study used a qualitative exploratory descriptive design. Qualitative research methods have proven invaluable in providing rich descriptions of complex phenomena; providing insight into the experience and interpretation of events by individuals or groups with widely differing roles and perspectives; giving voice to those whose views are rarely

heard, and moving toward explanations of behavior or beliefs (Sofaer, 1998). This study's design included 5 focus groups and 4 one-time individual dyad interviews with African American adolescent girls and their mothers (N = 30). An advisory team consisting of a representative from each data collection site was formed to assist with recruitment of participants.

Protection of Human Subjects and Confidentiality

Permission to proceed with the study was obtained from The University of Texas at Austin, Committee on Protection of Human Subjects in the Office of Research Support and Compliance (see Appendix A). Prior to collection of data, permission was obtained from the Houston Independent School District, the Boys and Girls Club of Houston, and a church pastor from the Greater Houston area (see letters of support in Appendix B).

Consent / Assent

Once participants met the inclusion criteria for the study, an explanation of the study, expectations of the study participants, and use of information to be obtained was provided to potential participants and their parents. Each participant was asked to sign a consent/assent form (see Appendix C), to indicate their understanding of the study and willingness to participate. Signing of the consent/assent form constitutes understanding and agreement to participate in the study. Parents and adolescents were informed that participation was strictly voluntary and that a decision not to participate would not influence treatment of the adolescent at these agencies. Participants were informed of their right to withdraw at any time before or during data collection. Also, participants were informed that they were free to withdraw from the study at any time without fear of retaliation. An explanation was given to potential participants that participation involved

no known risks or harm, but would involve a focus group discussion with other participants or dyad interviews with adolescent girls and their parents. Participants of the focus groups and the dyad interviews were informed that for their time, they would receive a $10.00 department store gift card at the conclusion of data collection.

After consent and assent was obtained, the parents and adolescents were each asked to complete a short demographic form (see Appendix D) and a contact sheet (see Appendix E). The adolescents' demographic data forms had the adolescent's age, grade, gender, weight perception, and space to list memberships in group organizations. The parents' demographic data form contained parent's age, gender, employment status, type of insurance, and method of transportation. The contact sheet included the adolescents' name, parents' name, phone numbers, and address. The contact sheet was needed to arrange the time and date for the focus group or dyad interview. Only the researcher had access to the contact information. All information was stored in a locked file cabinet.

Sample

Focus Group Sample

The participants for the focus groups included 22 low-income African American adolescents, both males and females between the ages of 14 to 18 years old. The sample was divided into 5 focus groups which allowed adolescents enough time to express their opinions and perspective without competing with each other and provide a more comfortable environment for the participants to share their thoughts with others (Krueger & Casey, 2000). Three focus group interviews were conducted with African American girls only. Two focus groups consisted of one boys-only group and one mixed group of

girls and boys. The mixed gender sample enabled the researcher to gain information from a range of experiences and viewpoints.

Inclusion criteria for adolescent participants were: no history of chronic illnesses such as metabolic conditions (e.g. diabetes, hypothyroidism, other endocrine disorders), gastrointestinal disorders, or major psychoses (e.g. depression, bipolar, obsessive-compulsive disorder: see screening form), and no medically imposed food limitation/restriction and low-income. Low income was determined by eligibility for the free or reduced school lunch program as a proxy measure for income. This measurement is viable because African American families do not like to report actual income, but only low-income children are eligible for the school lunch program.

The entire adolescent sample is presented in Table 1 and includes four adolescents who participated in the dyad-interviews. The table is to highlight the adolescents' characteristics, therefore mothers information is not included. Participants ages were closely divided with the majority of the adolescents enrolled in high school (n = 20), girls (n = 20), and 16 and 18 years old (n = 15). Most of the participants viewed their weight as normal (n = 20) and listed involvement in social (n = 13) or sport activities (n = 9). Although, participants were eligible for free or reduced meals, most reported that their parents worked (n = 14) and had use of a car for transportation (n = 18). Parents did not respond to the identification of insurance (n = 15) but instead left it blank. This could be due to the parents' use of the adolescents to fill out the form. The adolescents may not know the information or the parents might have been uncomfortable providing the information.

Table.1 Adolescent Sample Characteristics

Demographics N = 26	(4 mothers not included in count)			
Age	14 (6)	15 (5)	16 (8)	18 (7)
Grade	MS (6)	HS (20)		
Gender	Girls (20)	Boys (6)		
Weight	UW (0)	NW (20)	OW (6)	
Organizations & groups	Sports (9)	Social/Civic (13)	None (4)	
Parent employment	FT (8)	PT (6)	Home (12)	
Insurance	Yes (5)	No (6)	Blank (15)	
Transportation	Car (18)	Bus (5)	Other (2)	ND (1)

Legend:

MS = Middle School	HS = High School	ND = no data
UW = underweight	NW = normal weight	OW = overweight
FT = full time	PT = part time	Home = homemaker

Adolescent Girl-Mother Dyad Sample

Dyad interviews were conducted in the home, school, and church sites. The adolescent girl and mother dyad sample consisted of 4 dyads (n = 8). Two of the dyads were obtained from the school and church settings. Inclusion criteria were the same for the adolescents in the dyad sample. However, some chronic conditions were allowed for the parents and for one adolescent in the church dyad who, during the interview, stated that she had a previous diagnosis of congestive heart failure (CHF). The participant with CHF is on medication for heart disease, and presently there is no physician restricted diet.

Recruitment Procedures

Three sites (school, church, and boys and girls club) in low-income, predominately African American communities were selected for data collection. The settings ensured a safe and familiar environment for the adolescents. The settings were selected because of the researcher having participated in health presentations and community teams at these sites. As a result of these relationships, the research has established trust and familiarity with representatives in these organizations. Also, these organizations were in a predominately low income African American area.

Recruitment for the samples began after approvals from the University of Texas at Austin Office of Research Support and Compliance Institutional Review Board (UT-IRB), and the target organizations. Flyers that included the researcher's name and phone number were distributed to parents at each site. Face-to-face discussions with parents at the sites or phone discussions were conducted to determine eligibility. Recruitment for the dyad samples was completed at the same time as recruitment for the focus groups. Adolescent girls were not allowed to participate in the interviews unless both the parent

and adolescent agreed to participate in the study. After dyads were recruited the researcher contacted the individuals and set up a date and time for the interviews. The interviews took place either at the school, church, or in the home.

Parents who were interested in permitting their adolescent to participate signed the consent form along with their adolescent, as long as they met the inclusion criteria. In addition, the demographic data forms were completed. The parent and adolescent data forms had a box to check if they were interested in being a follow-up panelist to review preliminary data findings. All parents that were approached gave consent and were eager for their adolescent to participate.

Next, the advisory team members, who were recruited from each site, identified potential participants at their location, distributed a flyer to the adolescent to take home to their parents, and obtained their phone numbers for the researcher to contact them to discuss the study. The flyer had the researcher's phone number and the advisory team member's office number on it. When parents expressed interest in the study, the researcher sent a study packet home with the adolescent. Study packets included a flyer describing the study, a screening form, a contact sheet, a consent/assent form, and demographic data forms. The parents were contacted, by either the advisory team members or the researcher, to encourage the return of study packet forms. A follow-up phone call was given to arrange date and times for the interviews.

School Recruitment

The researcher obtained permission from the Research Review Board (RRB) of Houston Independent School District (HISD) and the principal of the school prior to recruitment. The school setting recruitment included two focus groups. One focus group

consisted of 4 girls only; the second group include 2 boys and 2 girls; and 2 girls were recruited for the adolescent girl-mother dyad interviews (*n*= 8 girls, 2 boys, 2 mothers).

Church Recruitment

The researcher met with the pastor of the identified church and obtained permission to announce the study in the church foyer. The researcher answered any questions of interested parents and their adolescents between church services on Sundays and Wednesdays prior to recruitment. Recruitment from the church included one focus group of 4 girls only, and 2 adolescent girl-mother dyad interviews (*n* = 6 girls and 2 mothers).

Community Recruitment

With permission from the Boys and Girls' Club's manager, the researcher explained the study to both the parents and adolescents as they dropped off their children during a summer program. Their questions were answered at that time and consent forms were signed by both parent and adolescent. Recruitment in the community setting included two focus groups. One focus group consisted of 6 girls only. The second group included 4 boys only. This recruitment took place after data analyses of the high school and church groups to determine saturation of data.

Data Collection Procedures

This research study consisted of five focus group interviews of 22 African American adolescents that are representative of the population of interest and dyad interviews for more in-depth information of 4 African American adolescent girl-mother dyads who did not participate in the focus groups (*n* = 30).

Focus Group Interviews

After participant enrollment into the study, a date and time for the focus group was arranged for each site based on when participants were available. Plans were confirmed at each site and information about room locations was verified. The researcher moderated all focus groups. Two graduate assistants were trained as recorders and observers for group discussions. The training lasted two days and consisted of reading about focus groups and how to conduct focus groups, note taking, discussion of study aims, a mock focus group, and practice of working the tape recorder. At least one of the graduate assistants attended all focus groups with the researcher. Upon arrival of participants, the graduate assistant had the participants sign-in and directed them to the reserved room where the focus groups were conducted.

The focus groups format consisted of unstructured questions that were tailored for African American adolescent girls to get information about availability and access to healthy foods, meanings of healthy eating, importance of healthy eating behaviors, attitudes, barriers to eating healthy foods and what they think will help them to eat healthy. An interview guide, formulated from a pilot study with low-income African American adolescents, was used in the interviews. Examples of interview questions include: (a) What does healthy eating choices mean to you? (b) What influences your choices of what to eat? (c) Do school policies influence your eating choices? (d) What influences your decisions about what you choose to eat with friends in the neighborhood? (e) What are some things that stop you from eating healthy? (f) What are your attitudes toward food? (g) What are the differences in food choices or food preparation for African Americans than other groups?

Additional information consists of questions about food choices: "When do you choose not to eat enough?" and "What kind of foods are available to you or your family where you live?" (see Appendix F). Follow-up questions flowed from the participants' responses to previous questions. All interviews were audiotape recorded and transcribed verbatim after interviews by a qualified and experienced transcriptionist. This provided accurate records of participants' responses and ensured data integrity. The interviews lasted 60-90 minutes. Field notes were written immediately after the interview. Data collection stopped when saturation was obtained in the analyzed data. Saturation occurred after the third focus group interview and the fourth dyad interview data were analyzed. However, two more focus groups were conducted to clarify analyses and ensure that no new themes were identified (Strauss & Corbin, 1990).

At the conclusion of each focus group interview session, participants were thanked, given a gift card in an envelope and asked to sign a receipt form. The researcher assured the participants that the data would be reported as group data in the form of quotes and their names would not be used. However, pseudonames or the word 'participant' may be assigned to differentiate responses.

Adolescent Girl-Mother Dyad Interviews

Graduate assistants were not present during the dyad interviews. The researcher conducted these interviews in private to ensure confidentiality and to provide comfort in discussing personal information. The researcher arranged a convenient time to meet with adolescent girls and mothers. The researcher also obtained addresses and directions from mothers and ask them to identify a room in their home where the discussions would take place. The dyad interview format consisted of questions that were tailored to gather

information about parental influences on the adolescent girls' eating choices, neighborhood socioeconomic status (SES) influences, and cultural influences. This information helped to answer Research Question # 2: *How do low income African American adolescent girls interpret the microsystem influences of family, peers, school, and church on their decision making for eating choices?* and # 3*: What are the macrosystem influences on low income African American adolescent girls' eating choices?*

An interview guide for the dyad interviews was formulated using tested focus group questions (see Appendix G) and additional questions such as: (a) How often do you have family meals? (b) What food do you usually choose to eat at work or with friend? (c) Describe the store where you shop for groceries, (d) Why do you choose to shop at that store? and (e) What role does culture play in your choice of foods to buy?

At the conclusion of each interview session, participants were thanked, given a $10.00 department store gift card, and asked to sign a receipt form. The researcher assured the participants that the data would be reported as data consisting of individual quotes and that their names would not be used. Four dyad interviews were conducted. The dyad interview data were consistent with the information the adolescent girls in the focus groups shared. Analyses of this data revealed saturation, therefore additional dyad interviews were not needed.

Pilot Study

A pilot study, entitled *African American Eating Behaviors*, was approved by The University of Texas at Austin's Institutional Review Board on August 4, 2005. The purpose of the pilot study was to test and refine the interview guide to be used in

interviews for the current study. The interview questions were derived from studies in the research literature. The interview guide was organized based on Bronfenbrenner's ecological system theory, which is the conceptual framework for this study. The sample consisted of 5 African American adolescents who provided detailed feedback about the interview questions related to relevance to the topic, appropriateness for use with a sample of adolescents, and complexity of the questions. The sample included 2 African American adolescent girls and 3 African American adolescent boys. One girl was 14 years old, 2 boys were 16 years old, one girl was 17 years old, and one boy was 17 years old. Three of the adolescents were eligible for free or reduced lunch the other two did not declare their status.

Procedures for recruitment of participants. Permission to announce the study in the church bulletin was obtained from the pastor of a local church. The principal investigator met with interested parents and their adolescents between church services on Sundays and Wednesdays to answer their questions.

Procedures for obtaining informed consent. In the announcement flyer, parents with adolescents between 14 to 18 years of age were directed to the foyer of the church between and after services and met with the principal investigator. The pilot study was explained in more detail to both the parents and adolescents. Their questions were answered at that time. Parents and adolescents who agreed to participate were then asked to read and sign the informed consent, and the adolescents were asked to indicate their agreement to participate on the short assent form. Both parent and adolescent had to offer consent in order for the adolescent to participate in the study.

After consent and assent was obtained, the parents were asked to complete a short demographic data form. The demographic data form had the adolescent's name and contact phone number to arrange the time and date for the focus group. The focus group met at the church at a time prior to a planned youth activity. The focus group lasted 90 minutes.

The process for the focus group and the need for confidentiality of the information discussed by the group members were explained at the beginning of the meeting. Prior to discussion the researcher informed each participant that the information exchanged in the focus group was confidential and would not be discussed or shared outside the group. An agreement to maintain confidentiality of the focus group discussions was included on the assent form that was signed earlier by the participants. A copy of the assent form with the confidentiality clause was read at the beginning of the focus group session as a way to initiate a discussion about confidentiality in the focus group. The focus group began with a "trial run" of the questions by having the participants respond to the questions as if they were taking part in the study (Krueger, 1998, p. 57-60).

After the trial run of the interview, adolescents were given copies of the interview guide, and they were asked to give honest and constructive feedback about the questions. The principal investigator emphasized that they are experts on being adolescents and that their insights and advice are critical to future work. They were asked (a) if any of the questions were unclear to them, (b) if they were offended by the wording of any of the questions, and (c) if they felt uncomfortable in answering any of the questions. Their advice was sought specifically on wording of questions and the sequence of the

questions. The adolescents were also asked to consider whether they thought there were other factors that might influence adolescents' beliefs or behaviors, related to eating, that should be included in the interview guide.

After the focus group interview concluded, the tape recordings were transcribed verbatim, and the transcript was reviewed with the audiotape to ensure accuracy of transcription. The transcript was reviewed for critical feedback and corrections of the interview guide. The responses of the group members to the actual questions were read carefully and content was analyzed to identify topics or ideas that were included in the final interview guide. Interview guide questions were revised based on feedback from the group and analysis of the transcript.

Interview questions. The interview guide for the pilot consisted of 9 topical questions that had several follow-up questions associated with the topic (see Appendix F). Topics were related to healthy foods and healthy eating, food likes and dislikes, food choices such as foods eaten at home, food preparation, barriers to eating healthy, and differences eating with family, friends, and alone. Other topics included foods that were available in the neighborhood, the role of culture in food choices or food preparation, and media influences on food choices. Examples of follow-up questions were: "Is there a difference in the terms – healthy eating and healthy foods?"; "What does the word culture mean to you?"; "Is there a better word than barriers to be used or is this clear?"; "Are there ideas or experiences about eating behaviors that we haven't included?" The adolescents were eager and interested in responding to the questions and providing feedback to the wording of questions. Adolescents' feedback was used to revise interview questions for the proposed study.

Findings. Based on findings from the pilot study, one interview question was revised and 5 questions were added. The question, "What are the barriers that you see to eating healthy or healthier?," was changed to "What do you think stops you from eating healthy or healthier?" The adolescents stated that the word "barrier" was unclear and that using "stop" would be much clearer. Also, responses to a follow-up question about experiences that were not included in the pilot interview yielded 5 additional questions: "Do you have food cravings, and how do you handle them?"; "Do you eat until you feel stuffed or full (Why or why not)?"; "Do you eat differently when there is a lot of food in the house?"; "Do you have any past experiences with eating that effect your eating?"; and "When do you not eat enough?" The adolescent responses provided valuable feedback that lead to additional questions, included in the interview guide for the proposed study investigating African American adolescent eating choices. These questions will aid in providing relevant data for analysis with grounded theory.

Data Analysis Procedures

Grounded theory focuses on social processes (Cohen, Kahn, & Steeves, 2000) that impact on the experiences, attitudes, and meanings in the lives of people. The data collection process and data analysis procedures used in grounded theory consists of constant comparison technique to uncover the processes that social groups use for dealing with their problems (Chenitz & Swanson, 1986). This process allowed the study to answer Research Question # 1: *What is the basic psychosocial process that low income African American adolescent girls develop for making eating choices?*

In this study, focus groups and individual dyad interviews were audiotape recorded and transcribed. The data were identified based on site, sequence of interviews,

and type of interview. For example SFG#2 was the second focus group at the school site. The first phase in data analysis using grounded theory approach is the discovery of categories. This discovery is done using line-by-line coding of the data and then recoding the data and labeling responses (concepts). These responses are grouped in clusters according to differences and similarities (Chenitz & Swanson, 1986). The next phase is building the categories. This phase consists of recoding the categories based on additional analysis of "questioning the data," interpretation of newly obtained data, and refining the categories (Chenitz & Swanson, p. 113). The third phase involves linking the categories. This phase includes identifying relationships between and among the existing categories. Potential "hypotheses are derived and compared to incoming data" (Chenitz & Swanson, p. 115). The fourth phase is identifying the core categories. The core categories are the "main thoughts or central ideas related to the phenomenon" (Chenitz & Swanson, p. 115). Also, the relationships of the categories are clearly identified. The final phase of grounded theory approach to data analysis is diagramming the phenomenon. This is a "visual representation of the categories and how they are linked" (Chenitz & Swanson, p. 117). This is also a representation of a substantive theory. There were three major types of coding used in the development of the substantive theory: open coding, axial coding and selective coding.

Open Coding

Open coding is the first step in coding data for grounded theory. Open coding is the "process of breaking down, examining and comparing, conceptualizing and categorizing" data (Strauss & Corbin, 1990, p.62). The transcribed focus group interviews and individual dyad interviews were reviewed for accuracy by listening to the

audiotape while reading the transcripts. The transcripts were corrected and saved in wordprocessing file format. The transcripts were then formatted with larger right margins and line numbers added to provide space for coding. This overview began re-immersion and data analyses.

Data analysis began with line-by-line coding to identify words and phrases, then sentence-by-sentence to capture the participants' thoughts. Substantive codes were created by the researcher to describe the behaviors and perceptions of the participants. These codes were clustered together based on similarities and then briefly described. For example, eating environment was a substantive code that contained the codes of: family thing, eating, and family cooperation.

Constant comparison was used to cluster the substantive codes and aid in the emergence of categories. These categories were coded and compared again with each other to identify theoretical linkages or relationships between the categories (axial coding). This prompted the emergence of the core variable from the data. The core variable or the common experiences of low income African American adolescent girls was *Filtering the Mixed Messages*. The core variable, categories, and substantive codes will be discussed in detail in Chapter 4.

Axial Coding

Axial coding was the second step in the coding process. Axial coding is "a set of procedures whereby data are put back together in new ways after open coding" (Strauss & Corbin, 1990, p. 96). These coding procedures use a structured model of "questioning" the data to generate theoretical "answers." Axial coding was used to clarify the basic psychosocial process low income African American adolescents face in making

eating choices. The components of the axial coding model consist of causal conditions (antecedents), context, intervening conditions, consequences, and strategies (Strauss & Corbin).

Selective Coding

Selective coding is developed on the basis of axial coding. Selective coding is the "process of selecting the core category, systematically relating it to other categories, validating those relationships, and filing in categories that need further refinement and development" (Strauss & Corbin, p.116). Selective coding was used to identify the core variable of this study, relating it to other categories and validating these relationships. During each step of the research process the researcher must be aware of biases that can cloud the data analysis and findings of the study. Therefore, strategies must be in place to decrease the occurrence of bias and its effects.

Bias Control

The qualitative researcher takes on the participant-observer role in order to recognize that their presence does effect the situation being observed. Therefore, the researcher must address three goals: (1) to diminish their effect on the phenomena, (2) use their subjectivity to the advantage of the research, and (3) increase the objectivity of the data (Chenitz & Swanson, 1986, p. 56). The strategies used by this researcher are discussed below.

Researcher's Effect

One strategy that was appropriate to diminish the effect of the researcher was by using self as an instrument. The concept of self as an instrument can be accomplished by using self in the interactions with the participants (Rew, Bechtel, & Sapp, 1993). Using

self as an instrument has several attributes: appropriateness, authenticity, credibility, intuitiveness, receptivity, reciprocity, and sensitivity. The researcher had authenticity being of the same ethnicity and culture as the participants and this provided a sense of comfort in the discussions. Also, the researcher's experiences as a mother who has reared and dialogued with this age group increased the adolescents' confidence in sharing their thoughts. Information about the researcher as a mother of 4 daughters was shared with the adolescents and used to promote the researcher's commitment to addressing concerns of their age group and willingness to learn from them. This approach addressed the attributes of credibility and assisted in establishing rapport. Receptivity was evident by the adolescent girls' openness in sharing their experiences related to eating choices. Also, reciprocity was established by emphasizing to the adolescents that they were the experts and the researcher was learning from them. Intuitiveness and sensitivity was built into the data analysis by the researcher listening and staying close to the data so that the participants' voices were heard and their themes emerged. The themes were shared with a participant panel to ensure sensitivity (Rew, Bechtel, & Sapp).

Subjectivity

Subjectivity can be addressed by identification and awareness of one's own biases, sensitivities, and inner conflicts. One technique in identifying these biases was through journaling (Chenitz & Swanson, 1986). The researcher made a conscious effort to detail feelings, thoughts, and ideas elicited through interactions with participants. Journaling took place immediately after each interview session while thoughts were fresh to the researcher.

Objectivity

Objectivity was increased by discussing the research on a regular basis with one nurse researcher and a colleague who is an African American nurse and who has worked with adolescents in the community setting. Dialoging, with these two people, aided in confirming themes to ensure that the researcher was staying close to the data and the adolescent girls' own meanings. Also, writing field notes helped provide distance from the data and provided opportunities for reflection and awareness of one's own feelings and biases (Chenitz & Swanson, 1986).

Trustworthiness

In evaluating qualitative research the question of trustworthiness must be addressed. Trustworthiness supports the relevance of the findings. Conducting good qualitative research includes systematic and rigorous procedures aimed at reducing bias and error (Devers, 1998). Qualitative researchers have described methods uniquely suited for studying feelings, subjective experiences, and the different meanings that people attribute to events and situations in real-life settings.

There are 4 components that reflect trustworthiness of the data: (1) credibility (truth of findings as viewed through eyes of participant), (2) transferability (extent findings can be applied to other settings or contexts), (3) dependability (extent the research would produce consistent findings if carried out as described), and (4) confirmability (evidence that corroborates the findings). Credibility was addressed by a participant panel, using quotes in findings and two data collection techniques (focus groups and dyad interviews). Additionally, two researchers verified themes. Transferability was evaluated through discussions with African American colleagues who

work with adolescents. Dependability and confirmability was assessed through frequent communication with the dissertation chair who was familiar with grounded theory and has engaged in qualitative research. This researcher had access to the data, original transcripts, analysis documents, journal, feedback from the participant panel, and thematic findings (Devers, 1998).

Summary

This chapter describes the methodology used in this study. The design used a qualitative grounded theory approach. This approach was used to identify the problems African American adolescent girls face in making eating choices, and to learn how they make decisions about eating. Data was collected using focus group interviews and adolescent girl-mother dyad interviews. The research design, settings, sample, protection of human rights, data collection procedures and data analysis were discussed. The next chapter describes data analysis, findings from focus groups, and dyad interviews of low income African American adolescent girls.

CHAPTER IV: FINDINGS

Introduction

The analysis and interpretation of data collected through focus groups and dyad interviews are presented in this chapter. The focus groups and dyad interviews were conducted to answer the research questions posed in this grounded theory study. Bronfenbrenner's Ecological Systems Theory (EST) provided the contextual framework for forming the analysis and interpretation of the data. Using grounded theory methods, the researcher identified the core variable and illuminated the perspectives of low-income African American adolescent girls as they explained the basic psychosocial processes that influenced their eating choices.

The core variable or basic psychosocial problem that faced the participants was *receiving mixed messages*. Low-income African American adolescent girls *received mixed messages* about nutrition, health and foods from their microsystems that are comprised of friends and family, and from macrosystems that include textbooks and the media. They also received dual cultural messages: Afro-centric (centered on the African American community's views) cultural messages are received from their immediate and extended families, and selected media; and American-centered cultural messages are received from general American media, their schools, and often their friends. The American-centered cultural messages reflect a largely Eurocentric perspective. The mixed messages projected conflicting images of acceptable weight, descriptions of healthy eating, and outcomes of unhealthy eating for adolescent girls. In addition, exosystem influences such as geographical location of residence, and proximity and type of stores for food purchases further focus the adolescent girls on available foods from

which they can choose. To handle the barrage of mixed messages from their microsystem, macrosystem, and exosystem influences, low-income African American girls were *filtering the mixed messages* as the basic psychosocial process.

Grounded theory methods include three types of coding procedures: open coding, axial coding, and selective coding. Open coding consisted of line-by-line coding of data to identify the substantive codes that expressed or captured the meaning of the sentence. The substantive codes were then compared within interview transcripts and across interview transcripts to sort the substantive codes into related categories (Glaser, 1978). For example, the category of *cultural factors* is composed of substantive codes *American way*, *our way*, and *African American culture*.

The second coding procedure, axial coding, consisted of "making connections between the categories" (Strauss & Corbin, 1990, p.96). Theoretical coding, one type of axial coding procedure, was used to establish the relationships between these categorical codes (Glaser). In grounded theory method, theoretical codes emerge as the researcher "questions the data" using the five "C's" identified by Glaser for clarifying the components of the emerging process. These "C's" are causal conditions (antecedents), context, intervening conditions, consequences, and conditional strategies. The substantive theory or basic psychosocial process emerges with iterative questioning of the data to describe and explain the process used by social groups to deal with a problem. By adhering to these coding procedures, the process of *filtering the mixed messages* was identified in this study.

Selective coding involves the "process of selecting the core variable around which all the other categories are integrated" and describing the relationships between the

categories and the core variable (Strauss & Corbin, 1990, p.116). *Receiving mixed messages,* the core variable or basic psychosocial problem identified in this study, complicated the African American adolescent girls' work in making eating choices.

Receiving Mixed Messages

Mixed Messages from Media

The adolescent girls discussed *receiving mixed messages* from the media about eating choices. The messages involved healthy versus unhealthy eating choices advertised in commercials. The key foods advertised were fast foods and snacks. Messages promoting the consumption of these foods have been designed to impact the viewer's sense of taste as well as the visual appeal of the food, yet other sources in the media also advertised or reported that these foods were unhealthy. These conflicting messages led adolescents to question and mistrust all of these messages. For example one 18 year old in the school focus group stated:

> They [media] are showing that good stuff on TV, those advertisements, and it looks so good, but when you get there, it looks sloppy. So that makes you want to try it when you see something new come out on TV.

Another 18 year old girl from the church focus group explains the messages like this:

> Yes, like on one of those Mexican commercials, I want to try it then I think oh no [when I get it]. Like if you watch a Taco-Bell commercial and then they [media] be making it look so good, all that cheese…you be like "ooh." You could have just eaten a whole meal and your stomach about to bust open …and you be like, I want that Taco Bell because it

> looks so good, and then you get it you be like dang [it don't look the way it did on the TV]…but then every time you see the commercial it just look good you want to get it again.

Another 16 year old girl from the church focus group agreed, stating:

> It [the media] makes a big influence…because the Taco Bell commercial has the spicy chicken soft burrito, or something, ooh man they make that little chicken look so good, then the pico [degallo].

Yet, another girl from the church focus group discussed her disappointment with the media messages that she viewed as misleading:

> Your mouth just starts watering for it [food on the commercial]. I be like, "Ooh, Daddy get some KFC and potatoes and chicken…" but when you get the chicken…the chicken is so soft…you are thinking the chicken still go be a little crispy. It is all soggy because of the potatoes, it is all smashed down. I was like oooh…it looked like somebody just threw all this in the bowl. I was like it looked go good on TV, and it is not [when you buy it].

Another 16 year old girl from the school mixed focus group did not trust the messages about healthy foods:

> There is no such thing as healthy [foods]. I don't like salad; the media decides what's healthy. I mean to me I don't eat everything and I am still living. I am still doing good, but that's the way that the media and everybody else put it out there; you got this and this and such-and-such to

lose weight. You got to eat all these vegetables and all this just be healthy, but I think I am healthy. Cause I don't even much like salad.

Other girls and boys from the school focus group expressed agreement about the mistrust:

Male: "...but to me ain't no food unhealthy because why would they sell unhealthy food."

Female: "Like it ain't such a thing as a diet."

Male: "I am eating healthy every day..why would they say food that we eat is not healthy because it is not good for your body? I ain't been sick behind no food yet."

Mixed Messages From School

These adolescent girls also *received mixed messages* from school and their peers. In school the messages about the food guide pyramid are received from the health education classes. One adolescent girl from the church focus group discussed the conflict with these educational messages:

I try to go along with the little triangle thing, the pyramid. I don't do it all the time because I don't like vegetables. I will eat green vegetables, but my parents like making corn, but I will eat green beans. I will eat greens and everything else and mashed potatoes.

Another 16 year old girl described the efforts of her parents who believed these nutrition messages but were faced with environmental limitations, while other girls in the church focus group nodded their agreement:

> I think the big deal about the pyramid was a big issue with everybody because it told us how much you needed; this much was fruit, this much of vegetables. I think that is a very good thing for them to have, but not many people use it. I am dead serious I really don't follow it. My parents try their best to follow the pyramid. I don't eat bread that much either…but it is hard for me to follow the pyramid. Because they say okay 7 servings of this, 3 servings of 3 fruits, 3 vegetables, this much sugar.… It is hard to follow the pyramid, because they tell you to follow this order, but when you look around that order is kind of hard, because you have to really go somewhere and actually just buy the food….when you at the corner store you don't look at the pyramid and say okay what can I have in this store that's on the pyramid. Can't find no apples at the corner store…you just buy an apple or buy a piece of celery…to follow. You just see the fat stuff…The little bit top of the pyramid is all over you…okay anybody follows just that one little piece everybody may get a fruit every now and then….one little piece at the top of the pyramid is everywhere.

A girl from the school dyad #2 (S) and her mother (M) also commented on the food pyramid:

> S: [When I think about healthy eating choices] Eating what's on the chart – the diagram that you learn in school – the little pyramid.
>
> M: Yeah, that would be good information I think, but don't mean squat [nothing] because I don't eat off that chart.

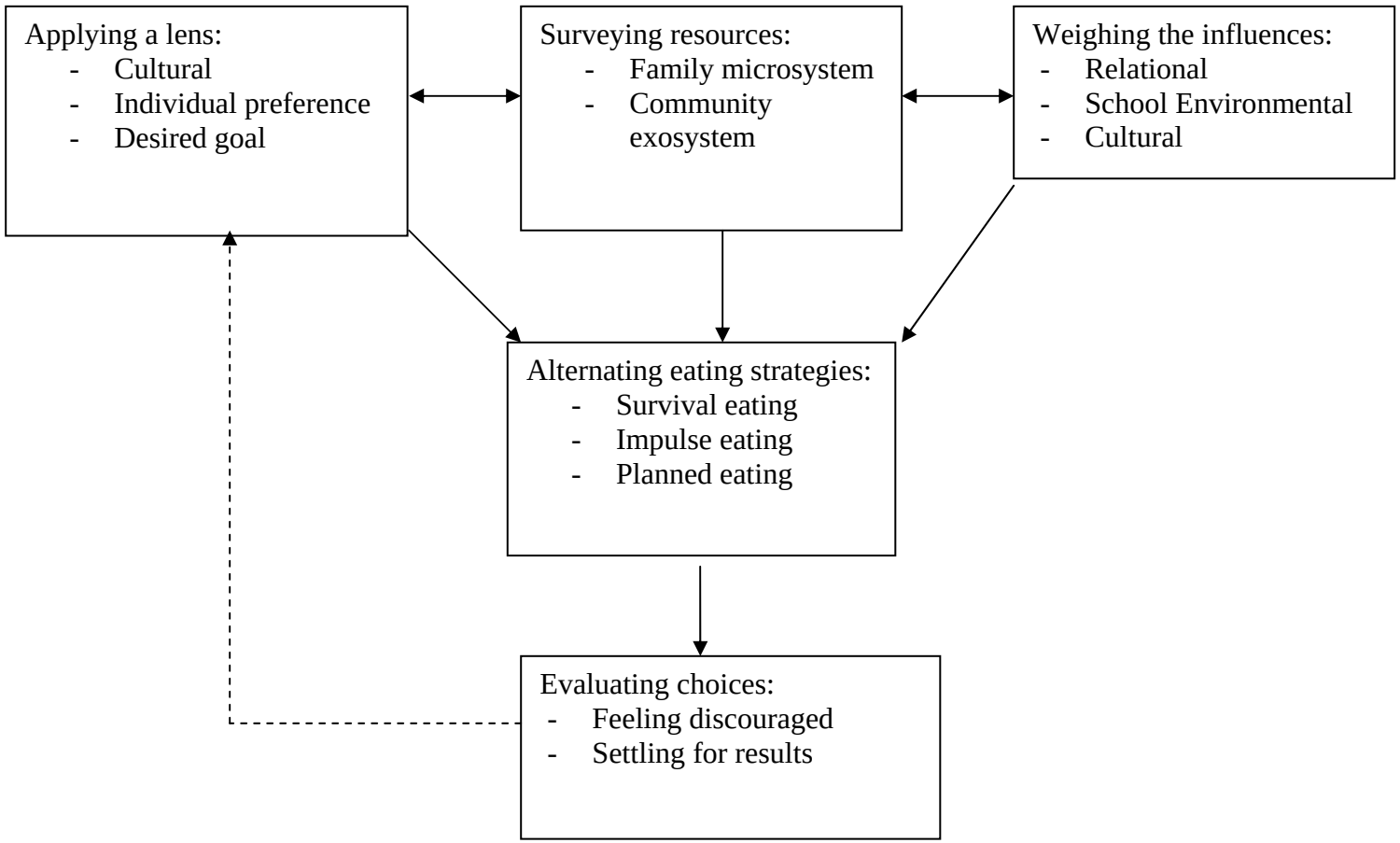
Another source of conflict and a form of mixed messages is the food served in the school cafeteria. The school meals are advertised as nutritious; however, many consist of fast foods and processed foods. Additionally, vending machines are accessible for adolescent girls to use during and after lunch. This provides another source of processed foods. The media and school are sending mixed messages about healthy and unhealthy eating choices to low-income African American girls. Low-income African American adolescent girls are *filtering these messages* to assist them in making eating choices.

Filtering Mixed Messages

The process of *filtering mixed messages* is comprised of five phases (Figure 2). The participants began the filtering process when they received these mixed messages from the microsystem and macrosystem. The five phases are: *applying a lens*, *surveying available resources*, *weighing influences*, then choosing *alternating eating strategies* and *evaluating their eating choices*. How the adolescent girl applies a lens, surveys resources and weighs the influences together impacts the eating choices she makes. The adolescent girls move between the first three phases until they make their eating choice. These eating choices may be evaluated by the adolescent girls based on their individually desired outcomes. The five phases and the categorical codes that comprise each phase will be described in the following sections.

Three research questions, based on Bronfenbrenner's Ecological Systems Theory, guided the researcher's inquiry in this study. The systems in the EST that were seen as having primary impact on the low-income African American adolescent girls' eating choices were the microsystem, exosystem, and macrosystem influences. The three research questions were: (1) What is the basic psychosocial process that low-income

Figure 2. Low income African American adolescent girls process of *filtering the mixed messages.*



African American adolescent girls develop for making eating choices? (2) What are the macrosystem influences on low-income African American adolescent girls' eating choices? and (3) How do low-income African American adolescent girls interpret the microsystem influences of family, peers, and school on their decision making for eating choices? The microsystem, exosystem and macrosystem influences were identified and are embedded in the larger process of *filtering the mixed messages.*

Applying a Lens

Applying a lens is the first phase of the process of *filtering the mixed messages* and is viewed as antecedent to the other phases in the filtering process (Figure 2). By *applying a lens* the participants brought the *mixed messages* into a perspective where they could begin *filtering the messages.* Then they could choose which messages to believe or not believe. The African American adolescent girls described three distinct lenses that they used to *filter mixed messages*. The lenses are the cultural lens, the individual preference lens, and the desired goal lens. Some girls applied all three lenses when *filtering the mixed messages.*

Applying a Cultural Lens

The cultural lens provides a macrosystem perspective for *filtering mixed messages* that is based on cultural practices and beliefs. Some of the adolescent girls differentiated between an "American way" and an "African-American way." For example, they indicated that the American way involves super-sized meals, fast foods, restaurant eating, and eating convenience. Whereas, the African-American way includes the soul food that originated during slavery, creating meals from left-over foods, and quick meal preparation techniques. However, these adolescent girls indicated that they viewed

themselves as having both an African cultural tradition and an American cultural tradition. Therefore, the girls made eating choices that fit either cultural tradition. For example, one 15-year old girl from the youth club focus group indicated that while she liked and ate "American" foods she also recognized the uniquely African-American food traditions that her family followed as well:

> Well, I think everybody has an American way, but then like the African-American [way] you know, I have realized that we eat like every part of the pig, like pig skin, chitterlings, crackling, all this type of stuff…everything. So I guess it stems from when we were bonded [slaves], we don't waste food. You make do with what you have. I guess that's where that stems from. If we have it, we are going to probably eat it; it is going to go somewhere.

The other youth club participants chimed in to support this explanation:

> Girl 1: She said it.
>
> Girl 2: Yes, I agree.

Other adolescent girls identified cultural influences in terms of foods eaten by different ethnic groups based on the food type, preparation, and seasoning of the foods, for example: Italian food, Chinese food, Mexican food, and Cajun food. As the adolescent girls eat these types of foods, over time the foods are incorporated into their "individual way." The varied cultural food traditions followed by people in the United States was discussed in the school dyad interview #1 with an 18-year old adolescent girl (E) and her mother (M):

M: Because if you look at it like mostly African Americans, we eat more starches than anything.

E: We eat like soul food, stuff like that.

M: Yeah – that's true….Italian people eat Italian food.

E: And Chinese people they eat like egg rolls and stuff….

E: Like – we fry our food and add extra stuff in them – like Caucasian people they don't put that much seasoning in they food.

African American girls who apply a cultural lens as they make eating choices are experiencing greater macrosystem influences in the process of *filtering the mixed messages.*

Applying an Individual Preference Lens

The individual preference lens provides a view of each adolescent girl's food choices that are often based on the family's traditions, many of which are based on cultural, and individual likes and dislikes. This lens is influenced by the adolescent girls' microsystem as well as individual preferences that have developed over time. Individual likes and dislikes are based on unique sensory characteristics such as how the food tastes, smells, and looks, as well as its preparation (e.g. fried, baked, or grilled). As two 18 year old girls from the all-girl school focus group described:

Girl 1: It depends on the way [the food] smells; the fragrance. If it smells bad, it's bad and I'm not going try it. If it smells good then it must be good, if it smells bad then it must be bad. If it looks good, not if it looks sloppy.

Girl 2: Yeah, it's got to look good. If it looks dry, oh no, I don't want it.

Preferences are developed over time as the adolescent girl is exposed to different foods and reinforced at family gatherings. One girl from the church focus group shared her family cooking traditions:

> I love creole food. I go to Louisiana and I am like, "Grandma, cook!" My mom and my grandma cooks this gumbo that make you slap everybody it's so good. "OH! Grandma, thank you." She put everything in it.

The importance of food sense appeal was upheld by all of the adolescent girls in the church focus group.

> Yea….it's like the taste temptation just takes over. I have like a taste preference. I will be like, "Ooh I want to try these egg rolls, but they look kind of nasty," and "I have had these boneless buffalo wings before, so I will get the boneless buffalo wings," so we will just switch. We will get the opposite thing. I will be like, "Okay, I don't want this any more." It's just like my taste preference.

Girls from the all-girl school focus group agreed as well:

> It depends on the taste the way it smells. Oh my, if it's got the right seasoning in it [nodding and smiling from others]….

If the *mixed messages* contain information that labels certain foods as unhealthy and these foods are preferred by the adolescent girl, then the message may be accepted and the girls may try to limit the certain foods. One 16 year old girl from the church focus group expressed it like this:

> It [eating healthy] means I am eating right. Picking from not necessarily the pyramid, but every day eating like a certain amount of this and certain amount of that…not too much sugar….not too much salt…keeping everything balanced.

In contrast, other girls may choose to ignore or block *mixed messages* that report their preferred foods as unhealthy. One 16 year old girl from church focus group stated:

> I mean, I would like some Sun Chips, but I just have a taste for hot chips…My granny be like, "Come on get the Sun Chips because you know it's going to be better for you." I be like, "I don't want them."

An 18 year old girl from the mixed school focus group explained it thus:

> I don't eat everything I am suppose to, like the TV and everybody say, you go to eat these vegetables to be healthy, I feel good.

Lastly, both boys and girls from the mixed school focus group agreed that the media has a significant influence on what adolescents choose to eat:

> The way they advertise [food] on TV, the way they call that [fast food] eating great.

Therefore, African American adolescent girls use the individual preference lens in making eating choices by accepting or blocking the *mixed messages*. This lens allows the girls to make eating choices based on their preferences and whether they believe the messages or not.

Applying a Desired Goal Lens

When adolescent girls view the mixed messages from the perspective of the goals that they desire to reach, they are *applying the desired goal lens* to their eating choices.

The participants identified the need to 'fit in' with the school crowd and the struggles that they saw big girls go through when they tried to 'fit in.' "Fitting in" meant being accepted by peers and included being an acceptable weight (i.e., not too fat) and acceptable appearance (looking pretty and stylish). The girls talked about the bigger (overweight) girls and their difficulty fitting in because of how others view their weight and their appearance. In their discussions it was clear that this was a state to avoid. They recognized that not fitting in can become a struggle for some girls and can affect their self-esteem. If the adolescent girls apply the desired goal lens in filtering the messages, then the subsequent eating strategies they enact are focused on reaching their goals. This perspective is strongly influenced by how the adolescent girls view the messages about acceptable appearance. The goals were described as *desiring to fit in* and *desiring an acceptable appearance*. The messages about weight, appearance and nutrition are believed or not believe based on *filtering the mixed messages* through this lens.

Desiring to fit in. The desire to fit in is prompted by the opinions, expressed by adolescent peers, about how girls should look if they want to be accepted by their peers. In one school dyad interview a high school girl explained:

> S: Especially at school, it is like the big girls. The only [big] people that just fit in is those who came [to school] already popular. Those who just come and they are already big… it's hard for them to get in [with the peer group]. Like one girl she came [to school] and she's big, but she is young, and they just started talking about her right away. That's what everybody say [that] the big people run to the [food] line and that's why they big.

S: Because of what advertising they have…they have, like, the size of the female...people are being criticized about the size they weigh, and most girls try to starve themselves and eat this and that so they will look right for what the people see. But most girls they eat according to what people say. If you get too big they will call you fat, but you can just be normal and they will call you fat. Then they have a problem with that and try to eat right. Some people starve themselves and get all...you know pills to lose weight.

Another middle school girl from the club focus group stated:

Well, some people are like, "well I am going to try to do this because I want to get thick" (bigger), you know like skinny people [say] "I want to get thick" and some people be like, "No, I want to get trim."

If adolescent girls have a strong desire to fit in with their peers, then this desire will determine how they view the *mixed messages* they receive about food. One 15 year old adolescent girl from the club group described the struggle of her sister who views herself as being a 'big girl.' She discussed how this desire to fit in was important to her sister and how the microsystem influences of the family and peers fueled her desire to fit it with other girls her age:

Well I think, just looking at my sister, you know we have grown up together; we live together so I think that she would do certain things [to fit in]. I noticed just observing her that she would do certain things to strike people attention away from her weight size to who she is. You know, and not all of them [the things she would do] were the best choices, but she did

> not want people to focus on her weight because she was very self conscious about it. She still is, and she does not say it outright but indirectly. You know, she will be like, "I wished I was maybe a little bit smaller or something." Momma always say things like, "Oh gosh! I was never this big." Yeah I think that it does make a difference, you want to fit in. I think with the media you are supposed to be a certain size and stuff and have the certain look. I will watch my sister struggle growing overweight, and I know that her feelings would get hurt because someone would call her fat. But she still loves herself, but I think she want to get to a nice slim size.

Desiring an acceptable appearance. Some adolescent girls' eating choices are based on their perceptions and concerns for their appearance. When adolescent girls filter the *mixed message* through this lens and accept messages from the macrosystem about an acceptable or desirable appearance, they set goals related to obtaining this appearance. They hope that they will be accepted by their peers and anticipate that they would begin to feel good about themselves. As one 16-year old from the club group explained:

> Well, I think that everyone is aware of their appearance. You want to look nice. You want to feel good about yourself, and a lot of it, I think, just stems from how high or low your self esteem is. Because if you feel good about yourself, I feel that everyone else will be cool with it because a lot of people might think, "well look at your size," or something like that. I really think that it is a little self-esteem type of thing.

Several adolescent girls from the club group discussed acceptable appearance in terms of the media messages (macrosystem) they heard from the popular African American culture.

> Like all these rappers they are talking about booty and chest and hips. So some people that listen to rap will be like, "Oh yeah, I want some booty, because some guys might like that." Some people that are watching these movies and like [say], "Ohh she is skinny and look at her," and some people want to be skinny. So it just all depends on what you listen to, or what you are watching.

African American adolescent girls use several lenses to *filter the mixed messages* from the macrosystem related to eating choices. Their eating choices depend on which lens they apply when *filtering the mixed messages*, so that the lens is an influencing factor in their decisions to believe or not believe the mixed messages. Based on their decisions, adolescent girls then *survey the resources* available to them at home (microsystem), in their neighborhood and the surrounding community (exosystem).

Surveying Resources

Surveying resources is the second phase of the process for *filtering the mixed messages* (Figure 2). Resources are found in the family home environment and in the larger community environment. The availability of resources is a conditional factor that can limit or support the adolescent girls' eating choices.

Family and Home Resources

The family is the close intimate environment (microsystem) of adolescent girls and the home is the setting where eating activities take place and family eating choices

are made. Food availability in the home is based on who purchases the food as well as the type and quantity of food that is purchased. Adolescent girls and their mothers described how food purchases are accessed.

In some families the parents have assigned to their adolescent daughters the responsibility of deciding what foods are available for the family. The girls discussed their responsibilities for shopping and purchasing food for the home. These girls were required to *survey the resources* that are available. They described buying food that they thought was needed for the home. Their food selections were based on the *lens they apply* to *filter mixed messages* and also on what food products or food resources were available. The girls who are given the responsibility to buy food obtain resources within their immediate area because, although their parents may have a car, the girls may or may not drive their parent's car to purchase food. Although these girls have this responsibility, the amount of money available for purchasing foods is dependent upon the parents' incomes. For example, one 18 year old girl from the girls-only school focus group explained:

> My mamma don't go grocery shopping no more, she just tell us, "Ya'll get some food." Then she gives us about $200.00 and we go to the store. We just go and be like, "well we know we don't got this in the house." After we get everything we know we need, then we get vegetables cause we eat salad everyday. After we get everything we need then we get chips and maybe some Doritos and stuff.

Other adolescent girls and boys' from the mixed school group indicated that their parents made food purchases. Sometimes the adolescent girls would have input into these parental decisions and at other times there was little or no input from the adolescents.

Boy: She [mother] pretty much knows what we like now so she just gets it.

Boy/Girl: She already know what to get (laugh).

Boy: She has a list sometimes and sometimes she don't.

Group: It depends on when we run out…yeah...we might need something.

Boy: Yeah, that's how mine is. Soon as she sees something keep getting low she will go [shopping].

The frequency of purchases depended on when and how often parents were paid or the income flow into the home and their ability to access grocery stores. Income flow includes both the frequency in which the parent receives a paycheck and the amount of the paycheck. The frequency of food purchasing influences eating choices available to the adolescent girls. When food is purchased sparingly or infrequently, then eating choices are limited. In contrast, when food is replenished on a frequent and regular basis, then eating choices are not as constrained or different eating strategies may be used.

The example below emphasizes the adolescent girls' and their mothers' discussions of eating choices related to income. In the dyad interviews they described that when food was first purchased, the family "eats better" than later into the pay period. The family food pantry is replenished after the paycheck is cashed and the adolescent girls have more eating choices because a larger quantity of food is available. The mother of a 16 year old adolescent from a school dyad group explained:

M: Because I go shopping twice a month…. So, with me going twice a month I have to buy food for 2 whole weeks. So, by [the] time we in the first week I notice we eat better than what we do the second week. I think our choices be better because the first of month it seems like you spend more – so you pick up more – you know you have more to work with. So I will probably pick up a lot of can goods. By the time I go for the next 2 weeks I really don't need as much can goods. And I guess it really depend on their daddy and his overtime – that makes a difference.

As time passes, the food becomes low in quantity and eating choices are more limited. The adolescent girls use different eating strategies when food is available in large quantities than when the availability is low. These strategies are presented in more detail later in this chapter; however, middle school adolescent girls from the club group described this strategy when talking about low quantity of food in the home. Below are two examples:

We had pork and beans and wieners or it may not have wieners; it could have been sausages, you know, you just substitute things and you just make do with what you have, syrup sandwiches- anything that is good- and it is up there and it stick with you. It don't even have to be good.

Another adolescent girl described her eating strategy when food quantity is low:

I begin trying to save stuff for like when I have company…not even when I have company, but just saving stuff for weekend, like if I need some snacks…because if I eat it all up then on the weekend, I am not going to have anything, and that's going to be bad.

Adolescent twin girls from the club group discussed the unpredictability of their family income flow. Because of their mothers' occupation, they never know when foods will be purchased. At times, the twins used the money that they earned babysitting to purchase food for the family.

> I don't know…because it [mothers' pay] is random because she is a hair dresser. Whenever she [mother] goes to work that's when she gets money. It is no weekly pay check or anything so it [pay] is just random. When she really does have it [money] then that's when she goes shopping, so we [twin girls] don't know, we just eat. It might be like weeks before my mom goes shopping, so it is like no…no don't drink all that juice. Sometimes we will go buy stuff because I baby sit from time to time, and I baby sit some wealthy kids, so they might give me $70.00 and $50.00.

Community Resources

Adolescent girls are accessing food in the community (exosystem) where small convenience stores are within walking distance from their homes. Other food sources within walking distance are fast food restaurants. The researcher conducted a visual survey of the participants' neighborhoods. The typical neighborhood had numerous small individually owned stores that sold processed food items (hot and cold), fast food stores that were a part of a restaurant chain, as well as those that were not. Adolescent girls are able to purchase processed, prepared foods, such as chips, soda, hamburgers, tacos, egg rolls, pastries, burritos, and fried chicken. These foods are high in fat, sodium and sugars.

A few supermarket chain stores are available outside of the adolescents' neighborhoods (5 mile radius), however they are located in nicer neighborhoods. The adolescent girls and family have to travel 20 to 30 minutes outside of their neighborhood in order to access full service grocery stores. Full service grocery stores provide a variety of fresh meats, fruit, vegetables, as well as canned foods. Full service grocery stores have low sodium, sugar free, low fat or fat-free food options available; whereas, the small corner grocery stores located in the neighborhood have a limited variety of fruit, vegetables, and meats, and what they provide is generally lower in quality. These adolescent girls and their mothers discussed the necessity to travel outside of their neighborhoods to purchase healthy foods and have more variety of foods from which to choose. Additionally, they travel outside of the neighborhood to go to full service restaurants because the only restaurants in their neighborhood are the fast food variety. One adolescent girl from the church focus group provided this example that others supported within and across the different focus groups and dyad interviews.

> You look around there are not really a lot of places you can get healthy food, everything has so much grease and fat, like everywhere you go you walking down the street – McDonald's, Burger King, Taco Bell, Wendy's, KFC's, Jack-N-Box, Pop-Eye's. You just need a sign – healthy food – you just go there. Because like when you go there they don't even have a lot of varieties. At Wendy's you may get a baked potato and salad, that's about it, that is going to be a healthy meal. Everywhere else you probably have a salad, but you really just can't get other things that are healthy unless you somewhere like Boston Market, go there and get something to

> eat, but some of the stuff they serve not even healthy. Like Luby's… half their food is not healthy.

Another adolescent girl from the school focus group stated:

> No [other stores in neighborhood], except McDonalds and 7-11 but grocery stores are not in walking distance.

The mother from the school dyad #1 expressed this:

> I normally shop at Wal-mart, so I drive away. Corner stores don't have a variety of a lot of healthy things, junk, just pickup and go, or either we got fast foods. You know – we got a couple of fast foods, and we don't really have no restaurants. We have no restaurants at all. So we have to go out. I have to go out across town if I want to go to a restaurant, or if I want to go to a big grocery store. So, I normally go out.

Many African American adolescent girls in this study have had the responsibility of *surveying available resources* in the home (microsystem) and in the community (exosystem) for family eating choices. Limited resources were available in the immediate neighborhoods that the adolescent girls could access. Their neighborhoods included fast food restaurants, corner stores and small grocery stores that have limited fruit, vegetables and lean meats. However, these resources have a variety of prepared processed foods that are high in sodium, fat and sugar. The decisions adolescent girls make when they are responsible for purchasing food for themselves, or for their families, is influenced by the lens they apply and resources available to them.

Weighing the Influences

Weighing the influences is the third phase of the filtering process (Figure 2). Weighing involves assigning value to the relational influences and school environmental influences in the microsystems and the cultural influences in the macrosystem of low income African American adolescent girls. Adolescent girls use the phases of the filtering process beginning with *applying a lens* and *surveying available resources*, then *weighing these influences* as they make decisions about eating choices. Influences that are more valued are given the most weight. *Weighing* provides the context or environment in which the filtering process occurs. The weighing process has three sub-categories: (1) relational influences, (2) school environmental influences and (3) cultural influences. Examples of these influences are presented below.

Relational Influences

Relationships that occur in the adolescent girls' immediate environments are very important and also influence their eating choices. These relationships are assigned value (weight) related to the strength of these influences on the filtering process. Consistent with Bronfenbrenner's EST, the girls' discussions of important relational influences centered on their microsystems of family and friends.

Family influences. The adolescent girls' family practices and preferences are assigned a value, during the filtering process, which can be related to family influences. Some families have routine foods that are prepared for meals. The adolescents call this their "family thing." Adolescent girls enjoy some of these routine family foods, but they find they do not like all of the routinely prepared foods. If adolescent girls dislike the foods, then they go outside of the home and purchase other foods. The parents'

preferences in meal preparation determine which of the foods are prepared. However, some parents are not involved in meal planning or meal preparation, thereby allowing adolescent girls to cook whatever they believe will satisfy them. This choice is made within the limits of what food is available in the home and considering what food is quick to prepare. A mother and adolescent girl in a church dyad expressed conflicting preferences about food preparation.

> M: Now, I tried this thing for a while, this grilling, baking, boiling, and broiling, but kids now a days…that just, to them, it is out of the question.
>
> B: I'm not like a baked person. I cannot stand baked chicken. It was like she had this point where you could not fry anything in the house.

A middle school boy from the club group clearly conveys his parents' influence on food availability, his statement echoed some of the girls' sentiments.

> I think my parents [influence my eating] because they buy the food. If they bring something in the house that I don't want, I might walk to McDonald's or to Burger King.

Family practices also have significant influence on eating choices of adolescent girls. A girl from the club group discussed the importance that the family places on food. If the adolescent assigned a strong value to this practice, then their eating choices would reflect this:

> [Family] food was so good, but after every time [eating] we would go through this whole little thing about what food was worth, and then they [parents] would have this whole slogan about "Take what you eat and eat

what you take." I guess that was just kind of embedded in me early and if I take it, I am going to eat it.

Another adolescent girl from the church focus group described her family practice in this manner:

> I say that my eyes get me in trouble sometimes, because I am going to wind up eating it [food]. I might not eat for a while afterwards, but if I took it, that's because my mom will say, "You are wasting food." So I will eat it just so I won't have to hear her mouth.

Friend influences. Adolescent girls weigh or assign value to the influences of their friends which impact how they filter the messages. Adolescent girls spend a good deal of time interacting with other girls and boys in the community, while shopping, participating in group activities and eating in restaurants. Friends may eat foods that the adolescent girls do not usually eat and introduce them to foods that they may or may not later begin to eat at home or in the community.

The adolescent girls from the all-girl school focus group discussed it like this:

> Girl 1: With friends – fast foods, hot fries, hot wings, everything from the store or fast food restaurant.
>
> Girl 2: Yeah, snickers.
>
> Girl 1: See they eat that hard core junk food; I don't eat all of that. I might get a honey bun and juice, that's about it. They be spending $5.00 and stuff on junk food and I'm like no. I just get a honey bun and juice and I am set.

In contrast, one girl from the church dyad #2 did not put much weight on her friends' influence:

> No, if I don't want to eat it, I am not going to eat that. They are not going to make me eat what I am not going to eat. I am one of the pickiest eaters you will meet.

Several boys from the all-boys club group discussed the influences of friends:

> Boy 1, denying his friends influence him: No, I don't think so .
>
> Boy 2: They [friends] try to get you to try stuff.
>
> Boy 3: Oh yea…[friends say], "You got to go try that Jumbo Jack, it's good," I think that is an influence…I am going to go try it…If it is nasty I ain't going to eat it.

Family and friends influence the eating choices of African American adolescent girls. Some girls may assign more weight to their friends' influence on their eating choices, and others may assign more weight to their family's influence on their eating choices. The adolescent boys were also confronted with peers' influence on their eating choices. These microsystem influences are always present but the adolescent girls indicate they are the ones who decide how and what they choose to eat.

School Environmental Influences

The school environment is where adolescent girls spend a large amount of time and have several eating opportunities. Each school has its individual food environments, however the adolescent girls described similarities in these environments related to the food selections available through the cafeteria and vending machines.

Cafeteria. The adolescent girls describe the food selections in their cafeteria and what value they assign to the *mixed messages* that they receive at school about foods. The cafeteria provides an array of foods, including selections from local fast food restaurants. The food service team also develops nutritious meal plans and offers these meals to the students. The adolescent girls describe the cafeteria food as "unpleasant" and labeled it as "junk food." However, one adolescent girl from the church focus group said the foods at her school were better than what was available at her home because of the lettuce and tomatoes that are included in the sandwiches at school.

> Well at home we don't have like healthy foods, and at [school] they try to have a healthy eating balance. We have like 4 different types of free lunch lines. Like you have a side where they serve all [food service meals], and then they have this little line where you can get nachos or burritos, and then they have a sandwich line where you can get a bag of baked Lays potato chips; you can get grilled or barbecue or ham, turkey and chicken. So I get grilled chicken sandwich, potato chips, and water for lunch. It's not so bad because it has lettuce and tomatoes, and sometimes I just eat everything out of the sandwich, like a salad but at home. I just can't sit down and eat stuff like that.

Three other girls from the church focus group further described their school environments:

> Girl 1: At school you can buy Popeye's, KFC, Papa John's. You can eat regular [school] food, get salads, tacos, burrito, nachos…whatever, like

different varieties. You can go to vending machines, have baked chips and water, or you can go through the line.

Girl 2: We have different stuff coming everyday. We will have Chick-Fil-A one day, Taco Bell the next day.

Girl 3: I am just eating junk food with friends when I come back to school.

Vending machines. The adolescent girls describe the vending machines as an alternative to the cafeteria food. The cafeteria food is described as not 'real food' and the adolescent girls use their lens, survey the resources and weigh influences to making eating choices. Access to the vending machines is limited to specific times in some of the adolescent girls' schools, whereas in other schools they are accessible throughout the day. Accessibility and availability provides opportunities for adolescent girls to use vending food sources as significant alternatives to cafeteria food. Several girls from the club focus group described their use of the vending machines in their school:

Girl 1: Yeah, like if you cut open a burrito at school and you just look in it. It look so…Uhhh!, the meat does not look like regular meat. It looks like somebody pounded it. It looks like somebody soaked it in grease, and it is just nasty looking, and it makes you not want to eat it, but you are hungry, so it is like you have to [eat it] or you go to the vending machines or something.

Girl 2: Yeah, we have vending machines, and you can go to them throughout. Well, you are not supposed to go to them throughout the day, but you can. They unplugged ours at first. Now, it is plugged in, but they set it. I guess they put a code on so you can't access it.

Girl 3: Not at our school. We can access it, but just at lunch and after school. I am trying to get everything I can and put it in my backpack. I used to eat through the class, so I put it in my backpack.

The school environment provides opportunities for eating choices that adolescent girls may not make at home. Schools have policies related to eating off campus during lunch and use of vending machines. Additional information from high school administrators about school policies was sought based on the participant's responses. The school had a closed campus policy which restricted students to the campus for lunch, except that senior students were granted the privilege of eating their lunches off campus. This school's policy also limited access to vending machines to the after-school hours. However, many students would get teachers to purchase foods for them from the vending machines in the teachers' lounge. The presence of cafeteria food and vending machines add more variety to the prepared and processed foods from which they can choose. Their decision to eat these foods depends on the weight that adolescent girls assign to these influences.

Cultural Influences

The adolescent girls' macrosystem of culture includes the individual family's practices as well as the ethnic culture. Culture also influences how adolescent girls view their weight. Traditionally, larger physical size was viewed as normal and therefore was well accepted in the African American culture. Also, there are family practices centered on food choices and food preparations that were taught and handed down within the family. Some of these family practices come from the ancestral ethnic culture and some from the shared culture that developed among African American groups within different

geographical areas. For example, families who grew up along the Gulf of Mexico incorporated more shellfish into their diets, while families who grew up along rivers would incorporate more fresh water fish (e.g. catfish) into their diets. Other non-African American cultures within the geographic area also impacted and exposed the adolescent girls to foods that were not a part of their traditional culture. Two girls from the club focus group, whose families were originally from Louisiana, shared these thoughts:

> Girl 1: I was raised up on that [fish and seafood]. Yeah – it is a family thing because I am from Louisiana, so basically that is all we eat. You know – my mom was brought up cooking those types of things. That's what you know how to cook. So your taste buds, I guess, just grow accustomed to eating those type of things: Cajun and Creole foods with red beans and rice and you might add hot sauce. It is all, I guess, what you are brought up on.
>
> Girl 2: My momma cooks everything pretty much. We have like a fish fry almost every month. We eat saltwater fish and catfish. Almost every month.

Adolescent girls discussed the influence of cultural background as a significant factor in what is considered to be acceptable or pretty. The girls from the club group stated that the African American culture has a range of models portrayed in the media who have culturally pleasing appearances. Some girls weigh these images based on the filtering process. Several girls involved in the discussions were in agreement with each other about these images:

> I think that it does stem a lot from what background you are, what ethnicity you are, because now it has become more acceptable to be thick, and I think that reaches out to more African-Americans than Caucasians simply because you see the Beyonces and Trinas and they got the booty, and it is like a coke bottle shape, and that is becoming more acceptable with the African-American youth. But I still talk to a lot of Caucasian people, and they're not like the booty people. They were the "big bust, but the size 1" people, so I guess it does stem a lot from the background, but even so, I was watching a show called "Monique's Fat Chance." It is really good because what I love about Monique though… it is like with this new…with this upcoming generation she is reaching out to more people and telling them just because you are overweight, although it might be a health issue you are still beautiful, and you just have to love yourself. That's what I love about her. She is beautiful, and she loves who she is, and I think that's where the self esteem comes in, I guess.

One girl from the girls-only school group stated that her mother cooks cultural foods for the family, but that she makes eating choices despite what is prepared and rejects some of these cultural food preferences:

> Chimmy Chans chicken - that's my family thing and pork chops. If I go away, I can eat anything cause they [mother] cook stuff that I don't eat. Hamburger helper. We eat that stuff at least 3 times a week. But, other than that when they cook soul food and stuff they always cook stuff like neck bones, pork bones, turkey neck…and I don't eat none of that.

It is clear there are several influences from the microsystem and macrosystem of African American adolescent girls on their eating choices. These influences are weighed and assigned value related to the amount of influence on their eating choices. Some influential factors are rejected or are assigned little value while others are more influential. Whether high or low, these influential factors are weighed in the process as adolescent girls filter the mixed messages from the macrosystem. Based on these activities, African American adolescent girls choose various alternating eating strategies.

Alternating Eating Strategies

Alternating eating strategies is the fourth phase of the filtering process (Figure 2). The practice of *alternating eating strategies* involves the strategies or behaviors that low income African American adolescent girls choose to implement as they move through the filtering process. Adolescent girls alternate their eating strategies and individually select from several strategies that they think will accomplish their goals. They alternate between and among these eating strategies depending on how they *filter the mixed messages*. These strategies include *survival eating*, *impulse eating*, and *planned eating*. *Survival eating* occurs in the home when large quantities of food are available that frequently happens after food is first purchased. Adolescent girls do not use survival eating strategy outside of the home because of their concern about how this would be viewed by their peers. Whereas, *impulse eating* involves eating in the spur of the moment when adolescent girls are hungry and want to eat something quick and do not have a lot of time. *Impulse eating* takes place in the home, in the school and in the community. Finally, *planned eating* occurs when the adolescent girl is making a conscientious effort to eat a certain amount of food or certain types of food.

Survival Eating

Survival eating is a strategy that is used by adolescent girls when there is a large quantity of food available in the home, in contrast to other times when the food pantry is low in quantity. This large amount is viewed as a surplus of food and the adolescent girls described eating a large amount of food, while it is available. Also, prior to the purchasing of food, when the amount of food is low in the home and the adolescents have limited choices, their eating decisions are geared to make the available food last until the next grocery shopping day. So when newly purchased food enters the household, there is an eating frenzy, as described by the adolescent girls. They consume foods until they cannot eat anymore or until the food is in low quantities once again. This alternating pattern of over-consumption followed by lean eating that occurs, in relation to food availability, is a basic survival strategy. A girl from the girls-only school focus group elaborates:

> After shopping I eat a whole bunch. I eat all night cause it's like I be real hungry when it's time to go shopping and it be so much you can only eat a little.

Another girl from this same group added:

> I can eat everything, so it's like when you say you're going shopping it's like, "ohh" so much stuff," chicken wings and when everybody starts eating, it's like, " I don't want any of that no more."

A girl from the mixed school focus group stated:

> You just see stuff up there, like if it is up there you just go get it.

A girl and mother from the school dyad #2 had this response:

> E: Yeah, we be like, " [see] all of this food," and you just want to eat.
>
> M: Because the first week [after shopping] they do eat the sandwiches and cereals and stuff like that, but I know coming to the second week, there is no more.

Impulse Eating

Impulse eating describes an eating strategy that adolescent girls use when they are hungry and want to eat something quick because they do not have a lot of time. This can take place at home or in the community with friends. As an adolescent girl from school dyad #1 explains:

> It's because it's there, you want to eat it, so you are constantly eating, but then at the end you know, you start slowing down.

Several girls from the club focus group discussed this strategy:

> Girl 1: It just depends on how hungry I am. Most of the time whatever is in the kitchen I eat it – cereal – anything left over my mamma cooked – anything - it doesn't matter. When I am hungry because it is there [it's quick].
>
> Girl 2: Normally it is just whenever I go to look in the pantry I am snacking, so it is either cereal or yogurt.
>
> Girl 3, explained the strategy in relation to her training:
>
> It depends on like, if I am training for basketball. So, if I am trying to work out with that or go to the track, I might grab a fruit or something or drink something.

This strategy was also described by a girl from the church dyad #1:

> What's there now that look's good at the moment, or may be what I am feeling at the moment. Mostly, if I am on the go, I will run in the store and get a bag of chips and a soda, or may stop at the fast food place and get a burger and keep going.

Planned Eating

Planned eating describes the eating strategy used by adolescent girls based on their attempts to pace themselves in their eating. They do this to avoid some unwanted consequences such as excess calorie intake and unacceptable appearance. These girls try to balance out their eating choices based on their perception of healthy and unhealthy choices. When they make poor eating choices, they balance the effects by making what they perceive to be 'good' eating choices. How adolescent girls plan and pace themselves depend on how they filter the messages. One girl from the church focus group explained it thus:

> Well me, I think about it, but I don't apply it. Like, I will be at the store and I be like, "Ooh, I know this is not good for me. Ooh this bag of hot chips look so good. Ooh I just got a $1.25 …should I buy the Lay's potato chips or the hot chips?...but I really want these so I am going to buy them." It's like, "look at all these calories," but I am still eating them. I am reading the bag and chewing, and I am still eating, so I will save half the bag so I won't eat as much. I think about it, but I half way apply it. Like some sun chips can be sitting there and some hot chips, and I will grab the hot chips and I say, "okay what if I just eat half the bag and not

> the whole the thing and that will cut half of my punishment." I think about it, but I don't [do it]. I am trying to work on it.

Another girl from the church focus group added to this discussion:

> But if we get hungry we will go to the little concession and buy like a fruit smoothie, but we will not go up stairs to the food court because we will be eating.

Middle school girls from the club focus group also discussed this need to balance or plan their eating:

> You have to eat more [when playing sports] because you are constantly burning energy and stuff like that, so you have to eat more, but you have to watch what you eat at the same time. Yeah!

Another girl from the club group described how she balanced eating junk food with eating healthy foods as part of her planned eating strategy:

> I've been trying to save stuff for when I have company.... I want to eat a good meal. I will eat a good balanced meal, then I will eat my junk food at school. There are certain things that I will do too. I will take a smoothie…I am like, "I want this [junk food], but I know I shouldn't be eating this." So I will go to Smooth King and get that big smoothie, and I am like, "Okay….good. I did something good today."

The girl from the club group that plays basketball explained her strategy of planned activity and eating during the season:

> That's another thing, when we play sports I eat a lot, but after that a day or two, I am going to eventually end up running. Like, sometimes I have to

> go to the track and run, and during the season that is when I really have to eat more. I really should watch what I eat, but I don't.

As the responses indicate, African American adolescent girls use various eating strategies based on how they *filter the mixed messages*. These strategies are chosen to accomplish outcomes that are determined based on the lens that was applied, the availability of resources, and the value assigned to influences from family, friends, school, and larger cultural influences. Certain strategies are used in the home with family, others are used with friends in the community. The adolescent girls are making decisions about which strategy to use. They also decide when and how to alternate between these strategies to reach their outcome or avoid unwanted consequences of eating choices.

The girls' perceptions about how their male peers might react to their eating behaviors may also influence which strategy they use and when. A 16 year old male from the pilot group voiced his frustration about girls choosing to eat a small amount or nothing at all during a date:

> Why do people also not eat as much as they should, no offense girls, some girls go out with their guy and they don't eat that much, maybe not at all. They might feel embarrassed or something, ashamed to eat in front of the male or boyfriend. So, hey, why do they act like that? I'm taking you out, you need to eat. Get a salad.

This strategy is an extreme example of *planned eating* in that the girls are restricting their intake when they are around boyfriends or male peers.

Evaluating Choices

Evaluating choices is the last phase of the filtering process (Figure 2). The eating strategies the adolescent girls use will result in outcomes that may be positive or negative. After *applying a lens*, *surveying available resources*, *weighing influences*, and then implementing *alternating eating strategies*, adolescent girls evaluate the consequences of the eating choices that they make. Their perceptions of these outcomes can determine their future behavior. Adolescent girls may be discouraged by their eating choices or settle for the results of their choices. These actions are based on their determination of the effectiveness of the strategies they use in attaining their desired goals of losing weight. Their evaluation may lead them to try other eating strategies when they feel discouraged, or they may continue their eating strategies when they decide to settle for the results of their eating choices. The outcomes described by participants were either feeling discouraged or settling for results.

Feeling Discouraged

Adolescent girls feel discouraged when the strategies they use to accomplish their weight and eating goals are unsuccessful. This leads adolescent girls to *re-apply their lens* or *apply another lens* and start the filtering process again. A majority of the girls from the girls-only school focus group expressed their feelings and other girls nodded in agreement.

> Girl 1: Like, when you start, [diet] and then nothing happen, and you are not losing no weight, it's like, "man (throws up hands)."
>
> Girl 2: I would [do something to lose weight] but when I give up small things, nothing change. Like, I don't lose no weight or nothing. Cause if you stop eating

something, you gotta work [exercise]. It's not like just stop eating and lose weight. It's like, as soon as you try to go on a diet, everything that you want be right there in front of you. It's like temptation. It's like when you can eat, it's not nothing there, but soon as you try to start losing weight, its right there.

Girl 3: Um hum, then when you go on a diet and you lose some weight, well since the weight is gone now, I start back eating. You start back eating, then you gain the weight right back.

Settling for Results

"Settling" describes the adolescent girls' attitude about the results of their eating choices. They explained that their choices were not good, but that they still were making these choices. This outcome reveals adolescent girls' determination and willingness to settle with their choices. The girls settle even though these choices did not accomplish a positive outcome. This highlights their independence in making choices regardless of outcomes. A girl in the church focus group comments:

I get influenced, but I kind of brush it off like my auntie, she had a heart attack from high blood pressure. My dad has an ulcer from all the spicy food, and my mom died because she had a lot of stuff clogging her arteries. I am like all of these things telling me not to do it, but I keep doing it because it tastes so good and I can't stop. Like I will be at McDonald's, and I be like these fries…I be like, "Dang! These fries will give you a heart attack," but I want them so bad and I will buy them, and I will be sitting here, and I will finish them, and I will be feeling so guilty. I know it's bad but we still eating it. It's good.

One girl from the girls-only school focus group made the following statement, while other girls expressed agreement by their nodding, laughing and hitting each other on the arm. The girl exclaimed:

> Cause when you eat that kind of stuff [junk food] you know what you are missing so you want it.

A comment by a boy from the school mixed group sums up this point like this:

> I mean, to me, I don't eat everything [I should], and I am still living. I am still doing good, but that's the way the media and everybody else put it out, that…you got to do this and this and such and such to lose weight. You got to eat all of these vegetables and all this just to be healthy, but I think I am healthy.

These responses serve to demonstrate how African American adolescent girls use the process of *filtering mixed messages* to make eating choices. Once these eating choices are made they evaluate the consequences of those choices. They may become discouraged by their eating choice strategies and seek to revise these strategies to reach their desired outcome. However, adolescent girls may settle for the results obtained from their eating choices and make no changes in their eating strategies.

Conclusion

In summary, *applying a lens*, *surveying available resources*, *weighing influences*, *alternating eating strategies*, and *evaluating choices* are the five phases which comprise the basic psychosocial process of *filtering the mixed messages* for dealing with the problem of *receiving mixed messages*. The process of *filtering the mixed messages* is a

substantive theory that is grounded in the data of low-income African American adolescent girls who are facing this experience daily and have openly shared their insights.

The girls' discussions highlight their struggles with making good eating choices. During many of the interviews, the girls identified decisions or eating choices that they knew to be unhealthy and their responses in those situations. For example, the girls described overeating after food purchases; or eating when not hungry, just because the food is available; and trying to balance out eating healthy and unhealthy foods. These and other examples from the data in the dyad and focus group interviews could serve as the basis for an intervention built on the adolescent girls' lived experiences. These findings are discussed in conjunction to current literature and implications for nursing research and education are presented in the next chapter.

CHAPTER V: DISCUSSION

This chapter addresses of the process low income African American girls used in making eating choices. This process has emerged through constant comparison analysis and selective coding technique of grounded theory methods. The findings will be compared to those from other studies of adolescent nutrition and cultural eating patterns. The research questions listed in Chapter One will be answered. Additionally, nursing implications for nursing research and education will be highlighted.

Summary of Study Design

The aim of this exploratory qualitative study was to identify the problems African American adolescent girls face when making eating choices and to learn how they make decisions about eating choices. The study's design included 5 focus groups and 4 one-time dyad interviews with African American adolescent girls and mothers (N = 30). The participants for the focus groups included 22 low-income African American adolescents, both males and females between the ages of 14 to 18 years old, and the dyad interviews were conducted with 4 mothers and their adolescent daughters (*n* = 8). Three of the focus groups were conducted with African American adolescent girls only. The two additional focus groups consisted of one boys-only group and one mixed group of girls and boys. The addition of boys in this study of adolescent girls enabled the researcher to gain information from a range of experiences and viewpoints. Three sites located in low-income predominately African American communities were selected for data collection. These locations included a high school, a local church, and a boys and girls club. An advisory team, composed of a representative from each data collection site, was formed to assist with recruitment of participants. Data analysis consisted of three coding

procedures: Open coding, axial coding, and selective coding to question the data. Selective coding aided in identifying and describing the core variable of *receiving mixed messages*.

Findings Summarized to Answer the Research Questions

Findings are presented as they relate to the three research questions that guided this inquiry. The questions focused on the basic psychosocial processes developed for making eating choices, as well as microsystem and macrosystem influences.

Research question #1: What is the basic psychosocial process that low income African American adolescent girls develop for making eating choices?

The core variable or basic psychosocial problem that faced this group of low income African American adolescent girls was *receiving mixed messages*. The mixed messages projected conflicting images of acceptable weight, healthy eating, and outcomes of unhealthy eating. *Filtering the mixed messages* is the basic psychosocial process - or the substantive grounded theory - that low-income African American adolescent girls used, to handle the barrage of mixed messages they received from their microsystems and the macrosystem regarding eating choices. The participants began the filtering process when they received these mixed messages from their microsystems (e.g. interactions with families, peers) and the macrosystem (e.g. social or cultural influences, media). The process of *filtering the mixed messages* is comprised of five phases that were labeled *applying a lens*, *surveying available resources*, *weighing influences*, then choosing *alternating eating choices*, and *evaluating their eating choices.*

The first phase of the process *filtering the mixed messages,* was *applying a lens*. There were three types of lenses that the adolescent girls chose to apply; cultural,

individual preference, and desired goal lens. The cultural lens provided a macrosystem perspective for *filtering mixed messages* that was based on cultural practices and beliefs. The individual preference lens provided a view of each adolescent girl's food choices that was based on the family's traditions, many of which are culturally-based, or individual likes and dislikes. The desired goal lens was applied when adolescent girls view the mixed messages from the perspective of the goals that they desired to reach.

The second phase of *filtering the mixed messages* was *surveying available resources*. Resources were found in the family home environment (microsystem) and in the larger community environment (exosystem). The availability of resources was a conditional factor in the larger process of *filtering the mixed messages* as this could limit or support the adolescent girls' eating choices. The family is the close intimate environment (microsystem) of adolescent girls and the home is the setting where eating activities take place and family eating choices are made. Food availability in the home is based on who purchases the food as well as the type and quantity of food purchased. Adolescent girls were accessing food in the community where small convenience stores or fast food restaurants were located within walking distance of their homes. In contrast, when parents purchased foods for the family they often traveled outside the community to access full service supermarkets that had a greater variety, quantity, and higher quality foods available.

The third phase of *filtering the mixed messages* was *weighing influences*. Weighing involved assigning value or weight to the relational influences of family and friend, and school environmental influences, such as the quality of cafeteria food and vending machines (microsystem influences). The participants also weighed the cultural

influences, such as perception of body size and eating practices, that are engrained in the African American culture (macrosystem).

Alternating eating strategies was the fourth phase of the filtering process. *Alternating eating strategies* were the behaviors that low income African American adolescent girls chose to implement as they moved through the filtering process. These included survival eating, impulse eating, and planned eating. Survival eating occurred in the home when large quantities of food were available. This condition frequently happens after food is first purchased. Impulse eating involved spontaneous or spur-of-the –moment eating when adolescent girls were hungry and had a limited amount of time to eat. Finally, planned eating occurred when the adolescent girls were making a conscientious effort to eat a certain amount of food or certain types of food.

Evaluating their eating choices was the last phase of the process, *filtering the mixed messages*. The adolescent girls viewed the outcomes of their eating choices and determined whether it did or did not accomplish their goals. When adolescent girls tried strategies and did not achieve the desired goal, some settled for the outcomes while others became discouraged.

Research question #2: What are the macrosystem influences on low income African American adolescent girls' eating choices?

Macrosystem influences on eating choices were clearly evident in the phases of *applying a lens*, *surveying resources*, and *weighing influences*. Macrosystem influences are the cultural and global factors that can impact on the adolescent's behavior (Brofenbrenner, 1979). Macrosystem influences for this sample were cultural and media messages.

Cultural messages. The cultural context was one perspective that girls used when they *applied a lens.* The cultural lens was evident when these girls talked about family traditions and included specific foods that are called soul-food. They recognized the eating of these foods as a tradition, originating during slavery that was handed down through generations. These foods were readily available and frequently prepared for the family's consumption. The girls felt that soul food was different from the foods eaten in the larger Eurocentric culture, although foods from the general American culture were also integrated into their meals. Similar feelings and viewpoints were presented in Delores James' (2004) study.

James (2004) reported discussions, from African Americans, about how their food choices provided connections to African traditions and culture. James interviewed 19 women and 21 men, ages 21-58 in 6 focus groups. The participants explained that eating these foods provided comfort and happiness and that giving up these foods was equated to giving up a part of their culture. In addition, they discussed family practices centered on food choices and food preparations that were taught and handed down within the family. Certain foods were incorporated from ancestors who prepared foods that were available in the area where they resided. Similarly, the girls in the present study identified different food traditions, distinguished as the "American way" and "our way." They discussed the differences in food preparation, such as frying and seasoning that they preferred, and food choices that reflected their African-American heritage.

Likewise, Hargreaves, Schlundt, and Buchowski (2002) reported qualitative information provided by 40 African American women in a focus group. The women emphasized the current importance placed on food preferences (taste and flavoring) and

food preparation (frying and stir-frying). These researchers' findings support the adolescent girls' discussion in this study about taste and food preferences that are prevalent in the African American culture. These messages are displayed throughout the developing years of the adolescent and the rich meanings attached to these food and eating messages are engrained. These cultural messages are also portrayed in African American media venues.

Media messages. Adolescent girls discussed mixed messages related to the written media (books, magazines), visual (television and movies) and recorded media (music videos). Some messages promoted eating according to the food guide pyramid, then the adolescent would hear or see commercials advertising eating fast foods. The general media has advertised thinness as appropriate and desirable in the larger Eurocentric culture, while the messages in some rap videos are highlighting fuller bodies and hips as desirable physical traits. These different influences are given weight by adolescent girls and, depending on the assigned value of the influence, are either acted on or dismissed. No studies were found in the literature that discussed media messages and perception of weight (body size) in African American adolescents. However, Tirodkar and Jain (2003) discussed food advertisements in both the larger Euro-centric media and the African American media.

Tirodkar and Jain (2003) reported the eating messages of prime time African American media via food commercials. Black prime time shows contained more food commercials (4.8 per half-hour show vs. 2.9: $t = 2.73$, $p < .01$) than general prime time shows. Specifically, food commercials during Black prime time television shows included more soda (13% vs. 2%), candy, chocolate (30% vs. 14%), and less breads or

grains (6% vs. 12%). Adolescent girls who are viewing the programs aired on African American channels are receiving these messages.

These messages may influence how adolescent girls view their weight. Traditionally, larger physical size was viewed as normal in the African American culture and therefore was well accepted. However, some media has emphasized thinness while other media supports heavier weight. For example the larger Eurocentric media has advertised the thin models wearing trendy clothes. Adolescent girls may seek to fit in with their peers and adopt different fashions or work to achieve the appearance that is portrayed in the media.

In contrast, the African American media, through music videos and feature films, emphasizes the rounder body with fuller breast and hips as the desirable appearance. Adolescent girls may see these images as acceptable in the African American woman and pleasing to African American males. They may seek to emulate this appearance and feel good about their (heavier) weight because their body size is seen as desirable. In their satisfaction with having heavier weight, their eating choices may not be constrained. This perspective allows them to eat what they want without worrying about how it impacts on their weight or health. African American adolescent girls viewing these images as normal and desirable will assign a high value to these images, if they accept the messages from the African American media. Conversely, they may reject the messages of the main stream media about thinness and weight reduction. The girls wavered back and forth on this because they are drawn to both messages. Often, health messages are discarded due to conflicting statements.

The mistrust of some messages and acceptance of others is an on-going struggle for these adolescent girls as they try to make sense of the conflicting messages. They are frequently making poor eating choices at fast food eating places, such as Taco Bell, Kentucky Fried Chicken and McDonalds. Many of these girls are simply considering all of the information that they receive as valid and do not know how to weigh or evaluate it. Adolescent girls need help in learning how to weigh information and how to distinguish good information from bad information. Additionally, they are willing to try new foods, but their taste preferences are important to consider. Therefore, these girls also need to be taught how to incorporate new healthy foods and new food preparation methods. These new approaches should produce foods and dishes that taste good and are visually appealing.

In summary, African American adolescent girls eating choices are influenced by macrosystem influences from the traditional food preferences and eating practices handed down in the African American culture. Additionally, these girls' eating choices are influenced by either the images of thinness and weight loss that are portrayed in the Eurocentric media or fuller hips and heavier weight that have been traditionally accepted in the African American culture. However, these influences present a dilemma in terms of eating choices. African American adolescent girls waver back and forth between them because they are drawn to both messages. They are forced to make eating choices several times a day based on their cultural lens and the value they assign to these messages.

Research question #3: How do low income African American adolescent girls interpret the microsystem influences of family, peers, and school on their decision making for eating choices?

The microsystem involves the immediate environment in which the adolescent lives. Microsystems are settings where people can easily engage in face-to-face interactions and interpersonal relations are experienced (Bronfenbrenner, 1979). Microsystem influences on eating choices were found in the adolescent girls' discussions about essential relationships of friends and family that occur in the home, school and community settings, such as the church and clubs. African American adolescent girls discussed what was termed their "family thing." This included the parents' and other family members' eating preferences. In some cases the adolescent girls had input into what food was prepared, especially when they were responsible for food shopping and cooking the meals. These activities were clearly evident in the two phases of *surveying available resources* and *weighing influences.* In the phase of *surveying available resources,* the girls discussed the foods that their families preferred and how they obtained food for the family. On the topic of *weighing influences,* the girls discussed the value of family, friends, and school influences that can impact African American girls eating choices.

Family influences. The adolescent girls in the present study surveyed the resources that were in their home and discussed family preferences. Their individual "family thing" included food preferences and food availability. Family food preferences are based on traditions that are handed down from parent to child. Therefore, the adolescent can adopt or reject these preferences. However, in some cases adolescent girls

have great input into what foods are available in their homes and the foods that are prepared, especially when they are responsible for shopping and cooking the meals. Some of the foods that are purchased are fruits and vegetables, but these are not the first items to be purchased. Whether fruit and vegetables are available in the home depends on how much money is left after other purchases are made.

One research study described the adolescents' food preferences (Sherwood, et al., 2003) that consisted of fruit drinks, grapes, pastries, and pizza. These foods are high in sugar and fat and were preferred over fruit and vegetables. Other studies addressed parental presence in the home on adolescent eating (Videon & Manning, 2003) and family meal patterns (Neumark-Sztainer, Story, Ackard, Moe, & Perry, 2000a). The findings from this present study, hopefully, will spur further investigation into the influence of family food preferences and meals on the food preferences of adolescents.

Friend influences. Microsystem influences of friends were very prominent in the phase of *weighing influences.* Adolescent girls spend a great deal of time interacting with their friends at school, in church groups, and neighborhood clubs. Friends offer foods that the adolescent girls may not usually eat. This can occur while walking to school or eating together at a restaurant. French, Story, Neumark-Sztainer, Fulkerson, and Hannan (2001) examined frequency of fast food restaurants use in association with adolescents' nutrient intake and food choices. The sample included 4746 adolescents in grades 7-12 (11-18 years old). These adolescents used fast food restaurants as much as 3 or more times a week. Results suggested the association of fast food restaurant use to the consumption of burgers, fries, and soda. As the use of these restaurants increased, so did the consumption of these foods.

Adolescent girls participating in the present study discussed eating out with friends at fast food restaurants. The foods that they described eating were the same as the adolescents in French et al.'s (2001) study who ate hamburgers, tacos, fries, and Snickers candy bars. Based on the findings from French et al., these eating choices are of concern because of their negative impact on health, weight and poor nutrient content. As adolescents continue to eat out with friends, they may continue to make these eating choices. Again, the influence of friends was assigned value, and these choices may or may not be different from choices in the home with family or at school.

School influences. The school influences are mostly based on the availability and type of cafeteria and vending machines food choices in their schools. Again, these impact of these factors was reported in *weighing influences*.

The cafeteria eating environment consisted of choices that were parallel to the larger neighborhood environment, including fast foods, such as tacos, hamburgers, and fries. The adolescents described the prepared cafeteria food (hot lunch line), such as creamed potatoes, meat loaf, and burritos with chili, as being unpleasant in taste. Shannon, Story, Fulkerson, and French (2002) surveyed 294 high school students and reported that cost and taste of cafeteria food influenced eating choices. A majority of the students (93.7%) reported that taste was important when choosing food. Also, cost of food was important to most (71.7%) of the students. Students valued taste of the food and getting a lot for their money (cost) in making food choices of cafeteria food. Zive et al. (2002) discussed a la carte lunches in 24 middle schools. The a la carte lunches had several food choices for the adolescent, including fast food items like pizzas, however, these items had a high fat content.

Students in the current study who participated in free lunch programs also had access to vending machine foods. Vending machine availability has increased in the school environment. Adolescent girls discussed the use of vending machines as a food option in school versus the cafeteria. Also, a la carte foods are being used as options along with vending machines and hot lunch line cafeteria foods.

Kubik, Lytle, Hannan, Perry, and Story (2003) presented findings from an investigation of 598 seventh graders from 16 schools related to association of vending machines and a la carte foods to eating choices. Findings indicated that students, in schools with a la carte programs, had lower intakes of fruit and vegetables and higher intake of fat. Additionally, with more vending machines, fruit intake in schools dropped. Adolescents who assign a high value to the influence of these food options may select less healthy foods if they are available in the school environment. These findings are in line with the responses of the adolescent girls in the present study who weigh school environmental influences of cafeteria food and vending machine food. The girls reported that the cafeteria food was displeasing in appearance and taste; however, cost was not as important because it was available cost-free.

African American adolescent girls experience several microsystem influences from their families, peers, and school. They interpret the importance of the influences and assign value or weight to these influences when making eating choices. These interpretations are based on their interactions within these relationships. If the adolescent girl assigns a high value to family food preferences and food preparation in the home, then these preferences may influence her eating choices with friends and at school.

However, if the girl assigns a lower value to family food preference in the home, then she may not practice these eating choices at school or with friends.

Additional Findings of Exosystem Influences

Additional findings are identified from the exosystem. The exosystem is the community resources discussed in the code of *surveying available resources*. Food resources in the low-income African American adolescent girls' community are mostly convenience stores where they purchase processed, pre-prepared food that are high in fat, sodium and calories. These stores are within walking distance from their homes, mostly across the street or around the corner. Family members have to travel outside of the neighborhood in order to purchase food at a full service grocery store. Study participants expressed that there were no places to purchase healthy foods in the neighborhood. However, there were many fast food restaurants available in the neighborhood that makes it convenient for adolescents to eat at these places. These findings were similar to French, Story, Neumark-Sztainer, Fulkerson, and Hannan (2001) who highlighted adolescent girls' use of fast food restaurants and the associated unhealthy eating choices.

French and colleagues (2001) stated that time and convenience were important factors in adolescents' eating choices. Specifically, the unhealthy eating choices were fast food restaurant use and the association with fat and sodium intake. For example, among girls with 3 or more weekly uses of fast food restaurants the mean nutrient intake had high levels of fat energy (31.2%), total fat (71.5g), saturated fat (25.4g), and sodium (2306.9mg). If this is representative of the kinds of foods available to the adolescent girls' in the current study, then they too are at risk for higher fat and sodium intake. Likewise, Nielsen, Siega-Riz, and Popkin (2002) reported an increasing trend in

adolescents eating snacks at stores (10.5%) and meals at fast-food restaurant (21.5%) which account for more of their energy intake.

Because of their income status and geographical location, the African American adolescent girls and their families in this study have less access to quality foods in their neighborhoods. Access impacts the type and quality of foods available for the girls eating choices. The girls and their mothers reported that they have to travel outside of the neighborhood to access full service grocery stores or supermarkets. Similarly, Morland, Wing, Roux, and Poole (2002) documented the type of food stores in low-income African American neighborhoods in a multi-state sample looking at 221 census tracts. Low-income neighborhoods consisted of majority African American residents and had one-third the number of supermarkets for a variety of food purchases. However, these neighborhoods had more fast food restaurants, small grocery stores, and gas stations where foods were available for purchase. Two additional studies supported these findings (Zenk et al., 2005a, 2005b) and further described these store characteristics as having poorer quality of fresh produce.

In summary, there are several environmental influences that impact upon the eating choices of this group of low-income African American adolescent girls. These influences are found within the microsystem, exosystem, and macrosystem of these developing adolescents. However, adolescent girls developed a psychosocial process of *filtering the mixed messages* to assist them in making eating choices. Few studies from the literature focus on the selected problems addressed in this study. However, those presented studies provide support for this study's findings related to environmental

influences on eating choices. Also, this study provides a springboard for the researcher to construct an intervention to address these findings.

Limitations of the Study

The study has several limitations that impact on its significance. One limitation is that the researcher is a novice at using grounded theory qualitative research method. The substantive theory is derived from the researcher's "best analysis" (Chenitz & Swanson, 1986, p. 13). The analysis includes the researcher's skill, time, resources and analytic ability. Another limitation is related to the cultural influences since the adolescents were not assessed related to their sub-cultural identification. However, there are more similarities than differences in the African American sub-cultural groups. Also, whether adolescent girls of different SES use similar or different processes cannot be determined: The findings only apply to this group of low-income African American adolescent girls.

Implications for Nursing Research

The lack of information related to cultural influences on adolescent nutrition warranted investigation. Cultural influences on African American adolescent girls eating choices described in the findings, add to the body of knowledge related to the cultural impact on health and behavior. This study reveals new information about the use of a process for making eating choices. These African American adolescent girls are not just making choices without thought, but are processing information and influences from their microsystem, exosystem, and macrosystem environments. *Filtering the mixed messages* informs nurse researchers, who are investigating eating choices or nutrition among adolescents that these environmental influences are important and must be included in nutritional assessment studies and interventions.

Several gaps have been identified in the literature on adolescents' nutrition and eating choices. There is little information about African American adolescents eating choices, the role of SES or income on eating choices, and ways to change adolescent eating behaviors (Jenkins & Horner, 2005). This study explored how low-income African American adolescent girls make decisions about eating choices. It begins to fill gaps in adolescent nutrition research. This is accomplished by including only African American adolescents and generating findings for planning further research and interventions that can be tailored to this group.

Interventions that target adolescents should include cultural influences as well as family, friend, school and neighborhood influences. This would provide a more holistic and comprehensive assessment and aid in designing a comprehensive and culturally appropriate intervention. Also, the current study consisted of low-income African American adolescent girls and mothers which provided a perspective of eating choices from a low-income population. Findings add to the literature by emphasizing the role of income based on SES and geographical location. Studies including SES had yielded conflicting findings in past studies. Consequentially, studies using income should include the geographical location of the participants under study and address how this environment impacts on adolescents. Future studies need to be done to identify effective interventions that will yield positive and lasting behavioral changes among adolescents related to eating choices and nutrition.

First, future studies should focus on designing and implementing culturally appropriate nutrition intervention programs for low income African American adolescent girls. These programs should address the filtering process related to how eating choices

are made. Interventions need to include instructions on eating choice alternatives that are nutritious. Also, adolescent girls need opportunities to learn how to prepare new foods that are healthy, nutritious, and that taste good. They need to learn how to weigh or evaluate food information to filter the good from the bad information. A comprehensive intervention should also include a cooking demonstration that will bring all of the instruction together. Ideas on how to cook and eat when food is plentiful or quick food preparation techniques for adolescents who are on-the-go would be helpful. Also, instruction on how to cook nutritiously by using canned and frozen foods, especially when the food availability is low, would be included. Application of interventions, tailored to the process identified by this study, could provide positive nutritional results and evidence of transferability of findings to other adolescent groups. Inclusion of physical activity along with eating strategies has been found to be more beneficial in reducing weight and risk of chronic illnesses (CDC, 2006). Therefore, researchers should seek to combine these two interventions whenever possible.

Second, replication of this study using high income and middle income African American adolescent girls will aid in determining whether these groups use another process for making eating choices. Alternative studies would provide more information about the role of SES in eating choices among African American adolescent girls in general. This would allow the researcher to separate these groups and provide a comparison of similar or different processes used in making eating choices.

Third, the church in the African American community remains a viable avenue of outreach. Partnering with individuals in local churches improves access to the community. There are individuals who do not necessarily attend church, yet the church

remains a beacon to draw these individuals when there are opportunities to meet their needs.

Fourth, using ecological system theory as a framework for investigating health issues involving African American adolescents, will add to the literature related to the effectiveness of this study's theory. This framework will provide the researcher with a comprehensive view of the influences that impact on the developing adolescent and can identify how or what influences enhance or hinder their development.

Lastly, conducting research using qualitative methods with African American adolescent girls in relation to other health issues will provide important information. Adolescents' own words can inform the nurse researcher about their views, perceptions, and concerns. This will enable the researcher to design interventions and develop programs to tailor these strategies to address the specific groups' needs. The adolescents themselves are the best source on their views and their needs. Qualitative approaches are the best method for obtaining this information.

Implications for Nursing Education

The study findings have implications for nurse educators who are teaching family health, mental health, and community health nursing. These nurse educators provide experiences that help nursing students work with adolescents in various settings, such as clinics, schools, and community events.

Family health nurse educators should use findings to add to the information taught about the influences of family, peers, friends, and the environment on the developing adolescents and their nutritional status. Also, teaching about assessment of nutritional intake and concerns should include the process adolescents use to make decisions about

what they eat. The filtering process needs to be discussed regarding African American adolescent girls' eating choices.

Mental health nurse educators should discuss findings with their students about how eating decisions are made, and about the value assigned to different influences. This further provides information about how adolescents think. Adolescents' behaviors involve thought and the use of thinking processes. Students should be taught to identify the use of processes by adolescents in decision-making.

Community health nurse educators should discuss findings with their students about how adolescents and their families use resources in their communities, including grocery stores and restaurants. Also, educators should teach their students about the impact of access to resources and the disparities in resources based on income and geographical location.

Conclusions

The focus of this exploratory qualitative study was to identify the problems African American adolescent girls faced in making eating choices and to learn how they made decisions about eating. Based on the findings and discussion, four conclusions are evident.

First, low income African American adolescent girls are receiving mixed messages. They are using a filtering process to deal with the barrage of these mixed messages. This process of *filtering the mixed messages* consists of five phases: *applying a lens, surveying available resources, weighing influences, alternating eating choices,* and *evaluating their eating choices*. Eating choices are made based on how they implement and evaluate this filtering process and evaluate the outcomes.

Second, the African American culture, community, and media are macrosystem influences on low income African American adolescent girls' eating choices. These influences are surveyed, assigned value, and acted on by the adolescent girls based on their assigned value.

Third, low income African American adolescent girls have microsystem influences of family, friends, and school environment. These adolescents survey resources available with family in the home, with friends in the community, and at school; they assign weight or value to the influences that in turn affect their eating choices.

Finally, the findings from this study can be used to guide future research, to design qualitative studies, to obtain information, and to tailor culturally appropriate interventions. Also, nurse educators should use findings when teaching students in family health, mental health, and community health nursing.

APPENDICES

APPENDIX A

The University of Texas at Austin Institutional Review Board Approval

OFFICE OF RESEARCH SUPPORT & COMPLIANCE

THE UNIVERSITY OF TEXAS AT AUSTIN

P.O. Box 7426, Austin, TX 78713 (512) 471-8871 - FAX (512) 471-8873
North Office Building A, Suite 5.200 (Mail Code A3200)

FWA # 00002030

Date: **04/12/06**

PI(s): **Sandra K Jenkins** Department & Mail Code:

Dear: **Sandra K Jenkins**

IRB APPROVAL - IRB Protocol # **2005-05-0095**

Title: **Low income African American Adolescent girls' eating choices**

In accordance with Federal Regulations for review of research protocols, the Institutional Review Board has reviewed the above referenced protocol and found that it met approval for the following period of time:

Your amendment has been approved from 04/12/2006 – 08/02/2006
The following requested changes have been approved:
Amendment to add new site.

x **Please use the attached approved informed consent**
You have been granted waiver of documentation of informed consent in lieu of verbal consent
You have been granted waiver of informed consent

RESPONSIBILITIES OF PRINCIPAL INVESTIGATOR FOR ONGOING PROTOCOLS:

(1) Report immediately to the IRB any unanticipated problems.

(2) Proposed changes in approved research during the period for which IRB approval cannot be initiated without IRB review and approval, except when necessary to eliminate apparent immediate hazards to the participant. Changes in approved research initiated without IRB review and approval initiated to eliminate apparent immediate hazards to the participant must be promptly reported to the IRB, and reviewed under the unanticipated problems policy to determine whether the change was consistent with ensuring the participants continued welfare.

(3) Report any significant findings that become known in the course of the research that might affect the willingness of subjects to continue to take part.

(4) Insure that only persons formally approved by the IRB enroll subjects.

(5) Use only a currently approved consent form (remember approval periods are for 12 months or less).

(6) Protect the confidentiality of all persons and personally identifiable data, and train your staff

and collaborators on policies and procedures for ensuring the privacy and confidentiality of participants and information.

(7) Submit for review and approval by the IRB all modifications to the protocol or consent form(s) prior to the implementation of the change.

(8) Submit a Continuing Review Report for continuing review by the IRB. Federal regulations require IRB review of on-going projects no less than once a year (a Continuing Review Report form and a reminder letter will be sent to you 2 months before your expiration date). Please note however, that if you do not receive a reminder from this office about your upcoming continuing review, it is the primary responsibility of the PI not to exceed the expiration date in collection of any information. Finally, it is the responsibility of the PI to submit the Continuing Review Report before the expiration period.

(9) Notify the IRB when the study has been completed and complete the Final Report Form.

(10) Please help us help you by including the above protocol number on all future correspondence relating to this protocol. Thank you for your help in this matter.

Sincerely,

Lisa Leiden, Ph.D., IRB Chair
Director, Office of Research, Support, & Compliance
University of Texas at Austin

APPENDIX B

Letters of Support from Participating Organizations

HOUSTON INDEPENDENT SCHOOL DISTRICT
HATTIE MAE WHITE EDUCATIONAL SUPPORT CENTER
4400 WEST 18th STREET • HOUSTON, TEXAS 77092-8501

ABELARDO SAAVEDRA, Ph.D.
Superintendent of Schools

Kathryn S. Sanchez, Ed.D.
Assistant Superintendent
Tel: 713-556-6700 • Fax: 713-556-6730

April 6, 2006

Sandra K. Jenkins
3303 Cumberland Drive
Missouri City, Texas 77459

Dear Ms. Jenkins,

The Houston Independent School District (HISD) is pleased to approve the study titled, "Low income African American girls' eating choices". The purpose of the study is to identify problems African American adolescent girls face in making eating choices and to learn how they make decisions about eating. The survey is conducted by a student at the University of Texas at Austin, to support her doctoral dissertation. The projected date of completion is November 2006.

Approval to conduct the study in HISD is contingent on meeting the following conditions:

- The target population consists of 8 -12 African American students from Wheatley High School. Ages 16-18 years.
- The research will consist of the following parts: 2 focus groups of 4-6 adolescents; and 2 individual interviews.
- The study will focus on sharing participant opinions about eating choices.
- None of the Sessions will be more than 90 minutes long, and will be taped on an audio only recorder. An incentive worth approximately 10 dollars will be distributed to student participants, as approved by the campus principal. Contact with student participants will end on November 30, 2006.
- Consent letters will be signed by parents for approval prior to student involvement in the research at any level.
- The data will only be reported in statistical summaries that preclude the identification of any student, or school participating in the survey.
- All follow-up activities will end November 30, 2006.
- The investigators will follow the guidelines of the Houston Independent School District and the University of Texas regarding the protection of human subjects and confidentiality.
- The study will not interfere with the district-wide instructional/testing program.
- The school personnel, parents and students will not be identified in the final reports.
- The district receives copies of district specific campus summaries within 30 days of completion of the study.
- The study involves no expense to the district outside of attached agreement for data processing.

Any changes or modifications to the current proposal must be submitted to the Department of Research and Accountability for approval. Should you need additional information or have any questions concerning the process, please call (713) 556-6700.

Sincerely,

Kathryn Sánchez, Ed.D.

KS:lok

Phillis Wheatley High School
Houston Independent School District

4900 Market Street
Houston, Texas 77020
Tel: 713-671-3900
Fax: 713-671-3951

April 19, 2006

The University of Texas at Austin
Office of Research and Compliance
Institutional Review Board
P. O. Box 7426
Austin, Texas 78713

RE: Sandra Jenkins Research Study

To Whom This May Concern:

My name is Wiley Johnson and I am the Principal of Phillis Wheatley High School in the Houston Independent School District. This letter is in support of Sandra Jenkins and the research project she is working on. She has my permission to conduct a focus group at our school. I am informed on the study and feel that our students will benefit from it.

The school is located at 4900 Market St in Houston, Texas 77020. I look forward to the implementation of the study and hope our students gain knowledge from it.

If you need more information feel free to contact me at 713-671-3900.

Sincerely,

Wiley Johnson

Wiley Johnson, III
Principal

BOYS & GIRLS CLUBS
OF GREATER HOUSTON

Administrative Office
1520-A Airline Drive
Houston, Texas 77009
TEL (713) 868-3426
FAX (713) 868-3703
EMAIL: bgc@bgclubs-houston.org
WEB: www.bgclubs-houston.org

Our Locations:

Clayton Homes Unit
1919 Runnels
Houston, TX 77003
(713) 222-0582

Fort Bend Unit
5525 Hobby Rd.
Houston, TX 77053
(281) 438-4720

Holthouse Unit
2411 Canal
Houston, TX 77003
(713) 227-1041

Lincoln Park Unit
790 W. Little York
Houston, TX 77091
(281) 448-0448

Jim & Barbara Morefield Unit
5950 Selinsky
Houston, TX 77048
(713) 991-5083

Kelly Village Unit
3118 Green Street
Houston, TX 77020
(713) 227-1240

Shell Unit
1520 Airline
Houston, TX 77009
(713) 862-7404

Spring Branch Unit
8575 Pitner
Houston, TX 77080
(713) 690-3946

Stafford Unit
3110 Fifth Street
Stafford, TX 77477
(281) 261-5737

United Way
United Way of the
Texas Gulf Coast

March 24, 2006

The University of Texas at Austin
Office of Research Support & Compliance
Institutional Review Board
P.O. Box 7426
Austin, Texas 78713

Re: Sandra Jenkins Research Study

To Whom It May Concern:

My name is Patricia Bledsoe and I'm the Branch Director of the Fort Bend Unit Boys & Girls Club. This letter verifies that Sandra Jenkins has my permission and support to conduct a focus group at our facility. The study was explained to me and I believe it will benefit the participants.

The facility is located at 5525 Hobby Street Houston, TX 77053. I look forward to the implementation of the study and hope positive changes in the lives of the participants occur.

If you need more information please call me at 281-438-4720 after noon Monday-Friday.

Sincerely,

Patricia Bledsoe, Branch Director
Fort Bend Unit Boys & Girls Club

TkhFkxufkdwEhwkhóvIdplb
14442 Fonmeadow Dr.
Houston, Texas 77035
713-729-0125 Fax 713-729-0378
www.bethelsfamily.org

March 20, 2006

The University of Texas at Austin
Office of Research Support & Compliance
Institutional Review Board
P.O. Box 7426
Austin, Texas 78713

Re: Research study related to adolescent eating choices

To Whom It May Concern:

Ms Sandra Jenkins has my permission and support to conduct a focus group among the adolescents in our church. Ms. Jenkins has explained her study to me.

Our church facilities will be made available to her for this important undertaking. We look forward to our continuing partnership with Ms. Jenkins as she seeks to inform our community and positively impact the health of our youth.

If there is a need to contact me concerning this letter of support, I can be reached at (713) 729-0127.

Sincerely,

Walter August, Jr., Senior Pastor
The Church at Bethel's Family

APPENDIX C

Participant Consent Forms

APPROVED BY IRB ON: 08/03/2005 EXPIRES ON: 08/02/2006 *SKJ72* 1
IRB# **2005-05-0095**

Informed Consent to Participate in Research
The University of Texas at Austin

Your adolescent child is being asked to participate in a research study. This form provides you with information about the study. The Principal Investigator (the person in charge of this research) or his/her representative will provide you with a copy of this form to keep for your reference, and will also describe this study to you and answer all of your questions. Please read the information below and ask questions about anything you don't understand before deciding whether or not to take part. Your adolescent's participation is entirely voluntary and you or your child can refuse to participate without penalty or loss of benefits to which you are otherwise entitled.

Title of Research Study: African American Adolescents' Eating Behaviors
Principal Investigator(s) (include faculty sponsor), UT affiliation, and Telephone Number(s): Sandra Jenkins, MSN, RN, Doctoral Student, (281) 438-9244 & Sharon Horner, PhD, RN, Associate Professor, (512) 471-7951

Funding source: Not applicable

What is the purpose of this study? The purpose of this study is to have adolescents evaluate and give advice about interview questions that Sandra Jenkins will be using in a future larger study about adolescents' eating behaviors.

What will be done if you take part in this research study? You or your adolescent will be contacted to arrange a time for participating in a focus group with other adolescents. This meeting will last 90 minutes at most. The adolescent will be asked to respond to the interview questions and give feedback about the words used in the questions, clarity and appropriateness for African American adolescents. The group discussion will be audiotape recorded. The information talked about in the group meeting is to be kept confidential – meaning that what is said in the group stays in the group and is not talked about outside the group. For example, the adolescent should not go outside the group and say, "John Doe said he has an eating problem with x because his family can't afford other foods."

What are the possible discomforts and risks? There are no known discomforts or risks in talking about adolescents eating behaviors.

What are the possible benefits to you or to others? There are no direct benefits to you or your adolescent child. It is possible that the adolescent's information will help other African American adolescents be healthy or become healthier in the future.

If you choose to take part in this study, will it cost you anything? There is no cost to you for taking part in this study, except for time.

Will you receive compensation for your participation in this study? No**.**

APPROVED BY IRB ON: 08/03/2005 EXPIRES ON: 08/02/2006 *SKJ72 2*
IRB# **2005-05-0095**

What if you are injured because of the study? There are no activities involved in this study that should place the adolescent at risk of injury.

If you do not want to take part in this study, what other options are available to you?
Your participation in this study is entirely voluntary. You are free to refuse to be in the study, and your refusal will not influence current or future relationships with The University of Texas at Austin or the church or the researcher.

How can you withdraw from this research study and who should you call if you have questions?

If you wish to stop your participation in this research study for any reason, you should contact: Sandra Jenkins at (281) 438-9244. You are free to withdraw your consent and stop participation in this research study at any time without penalty or loss of benefits for which you may be entitled. Throughout the study, the researchers will notify you of new information that may become available and that might affect your decision to remain in the study.

In addition, if you have questions about your rights as a research participant, or if you have complaints, concerns, or questions about the research, please contact Clarke A. Burnham, Ph.D., Chair, The University of Texas at Austin Institutional Review Board for the Protection of Human Subjects, (512) 232-4383. You may also contact the Office of Research Compliance and Support at (512) 471-8871.

How will your privacy and the confidentiality of your research records be protected?
The signed consent and assent forms and the demographic data form that has the adolescent's contact information will be kept in a locked filing cabinet separate from the audiotape and transcript. Because this pilot study involves a small group of participants in a one-time data collection, the transcript will not need a code number.

The adolescent's responses will be audio taped: the interviews or sessions will be audio and the cassettes will be coded so that no personally identifying information is visible on them. They will be kept in a secure place (e.g., a locked file cabinet in the investigator's office). They will be heard only for research purposes by the investigator and his or her associates and they will be erased after they are transcribed and data analyzed. The audiotape will be erased after the pilot study data have been analyzed. The transcript will be kept in locked file cabinet.

If in the unlikely event it becomes necessary for the Institutional Review Board to review your research records, then the University of Texas at Austin will protect the confidentiality of those records to the extent permitted by law. Your research

records will not be released without your consent unless required by law or a court order. The data resulting from your participation may be made available to other researchers in the future for research purposes not detailed within this consent form. In these cases, the data will contain no identifying information that could associate you with it, or with your participation in any study.

If the results of this research are published or presented at scientific meetings, your identity will not be disclosed.

Will the researchers benefit from your participation in this study*?*
Your participation will assist the researcher by providing information for a future study.

Signatures:
As a representative of this study, I have explained the purpose, the procedures, the benefits, and the risks that are involved in this research study:

_____ ___
Signature and printed name of person obtaining consent Date

You are making a decision about allowing your adolescent to participate in this study. Your signature below indicates that you have read the information provided above and have decided to allow him or her to participate in the study. If you later decide that you wish to withdraw your permission for your adolescent to participate in the study, simply tell me. You may discontinue his or her participation at any time.

You may keep the copy of this consent form.

_____
Printed Name of Adolescent

_____
Printed Name of Parent

_____ _____
Signature of Parent(s) or Legal Guardian Date

_____
Signature of Principal Investigator Date

"I have read the description of the study titled (give title) that is printed above, and I understand what the procedures are and what will happen to me in the study. I have received permission from my parent(s) to participate in the study, and I agree to participate in it. I know that I can quit the study at any time."

_____ _____
Signature of Minor Date

APPENDIX D

Participant Screening Form &

Demographic Forms

ID # _____

Brief Screening Questions

Parents:

1. Does your child qualify for free or reduced school-lunch program?

   Yes No

2. Do you have any chronic illnesses such as metabolic conditions (e.g. Diabetes, thyroid problems), or gastrointestinal problems?

   Yes (list)_____ No

3. Do you or your child have any medically imposed food limitation/restriction?

   Yes No

Adolescent:

1. Do you participate in a free or reduced school-lunch program?

   Yes No

2. Do you have any chronic illnesses such as metabolic conditions (e.g. Diabetes, Thyroid problems), or gastrointestinal problems?

   Yes No

3. Do you have any medically imposed food limitation/restriction?

   Yes No

4. Have you ever been prescribed medication to treat symptoms of a mental illness?

   Yes No

5. Have you ever been diagnosed with any of the following mental illnesses:

   Depression Yes No

   Schizophrenia Yes No

   Bipolar Disorder Yes No
   Other _____

Demographic Data Form-A

Please select the best response or fill in the appropriate blank. All information is confidential and will not be a part of other records.

ID # _____

ADOLESCENT INFORMATION

Adolescent's Age: _____

Adolescent's Grade: _____

Gender: GIRL _____ BOY _____

Do you see yourself as being (Check one please):

underweight _____? normal weight _____? overweight _____?

List membership in group organizations:

_____
_____
_____
_____
_____

What groups do you hang out with the most (sport, church, clubs)?

_____
_____
_____
_____

If you are interested in reviewing findings, please check the box ☐

Demographic Data Form-B

Please select the best response or fill in the appropriate blank. All information is confidential and will not be a part of other records.

ID # _____

PARENT INFORMATION

Parent's Age: _____

Gender: FEMALE _____ MALE _____

Employment:

_____ homemaker
_____ work (part-time)
_____work (full-time)

Type of Insurance _____

Method of transportation _____

APPENDIX E

Participant Contact Sheet

ID# _____

Personal contact information

Adolescent's Name: _____

Parent's Name: _____

Phone Number(s): _____ (home)

_____ (other – cell phone/work phone)

_____ (other contact number)

Address: _____

_____

_____

APPENDIX F

Pilot Study Focus Group Interview Guide &

Revised Focus Group Interview Guide

Focus Group Interview Guide

PERSON	1) What does the phrase- healthy eating choices mean to you? 2) Tell me a little about your food likes and dislikes. 3) What influences your choice of what food to eat? 4) How is the decision made about what to eat? 5) Think about healthy eating – a. Would you say you eat healthy? b. Are there any changes you could make in your diet to eat healthier? c. What do you think stops you from eating healthy or healthier? d. What helps you to eat healthier? 6) Do you have food cravings? How do you handle them? 7) Do you eat until you feel stuffed or full? Why? Why not? a. Do you eat differently when there is lot of food in the house? b. Do you have any past experiences with eating that effect your eating choices? 8) When do you choose not to eat enough? 9) What health information do you need to make healthy eating choices? 10) If you could design a program to help teenagers make healthy eating choices, what will it look like?
	ENVIRONMENT
MICROSYSTEM: HOME SCHOOL COMMUNITY	11) Think about home cooking – what foods are generally eaten at home? a. How are these home cooked foods different from foods eaten away from home? b. How often do you have family meals? 12) Think about eating at school – what influences your decision about what you choose to eat at school? What food do you eat at school? 13) Do the school policies (type of foods at school, lunch times, vending machine use, closed campus, etc.) influence your eating choices? How? 14) What influences your decisions about what you choose to eat with friends in the neighborhood?

	What foods do you choose to eat with friends in the neighborhood?
MESOSYSTEM	15) Is there a difference in what you eat when you are eating with family, with friends, co-workers or when you are alone? How or give an example. 16) Do the way you eat (food choices) with one group influence how and what you eat with the other group? How?
EXOSYSTEM	17) Think about your neighborhood or local community – a. What kinds of foods are available to you or your family where you live? b. Do you think this has a role in what foods are eaten at home? Or away from home? c. Describe the store where you shop for groceries. d. Why have you chosen to shop there? e. Tell me about your experience when you go shopping. f. Is there any preparation involved? g. How often do you go shopping?
MACROSYSTEM	18) What does the word culture mean to you? a. What role does culture play in your choice of foods to eat? b. What are the differences in food choices or food preparation for African Americans than for other groups? c. What are the similarities? d. Are there traditions (e.g. holidays [like New Years, Juneteenth, Kwanza, July 4th], birthdays, baptisms) that incorporate special foods that you generally only see in your family or other African American families' celebrations? 19) How do the media influence what you eat?

Rev:2/17/06

Revised Focus Group Interview Guide

PERSON	1) What influences your choice of what food to eat? **2) Where did these preferences for eating certain foods come from?** **3) How does your appetite, influence your eating choices?** **4) Does money or time influence what you choose to eat? How?** 5) How is the decision made about what to eat? **6) Does the desire to lose weight play a role in wanting to fit in? How about appearance?** 7) Do you have food cravings? How do you handle them? 8) Do you eat until you feel stuffed or full? Why? Why not? a. Do you eat differently when there is lot of food in the house? **b. Do you eat everything you can at one time or space it out to last?** **c. What happens when the food is low or gone? What are your eating choices then? What are your eating choices like before mom can get to the grocery store?** **d. Do you plan out your eating over a time until you know when mom's going grocery shopping? (Ex: mom goes every month, first of the month-do you plan what you will eat and how much so that the food can last over the month?)** e. Do you have any past experiences with eating that effect your eating choices? f. **How does your knowledge about disease in your family effect your eating choices**? 9) When do you choose not to eat enough?
	ENVIRONMENT
MICROSYSTEM: HOME	10) Think about home cooking – g. How are these home cooked foods different from foods eaten away from home? h. How often do you have family meals? **i. How does your family (parents, siblings) influence your eating choices?** 11) Think about eating at school – what influences your decision about what you choose to eat at

SCHOOL COMMUNITY	school? 12) Do the school policies (type of foods at school, lunch times, vending machine use, closed campus, etc.) influence your eating choices? How? 13) What influences your decisions about what you choose to eat with friends in the neighborhood? **a. How does your friends influence your eating choices?**
MESOSYSTEM	14) Do the way you eat (food choices) with one group influence how and what you eat with the other group? How?
EXOSYSTEM	15)Think about your neighborhood or local community – a. What kinds of foods are available to you or your family where you live? b. Describe the store where you shop for groceries. c. Why have you chosen to shop there?
MACROSYSTEM	16) What role does culture play in your choice of foods to eat? 17) How do the media influence what you eat? 18**) Do you think that there is an American culture an African American culture?** **19) What are the differences in the eating choices? How do you balance that because sometimes you eat that way?** **20) Do you think you get mixed messages from the media about what to eat?**

Rev:7/17/06

APPENDIX G

Dyad Interview Guide

Dyad Interview Guide

PERSON	1) What does the phrase - healthy eating choices mean to you? 2) Tell me a little about your food likes and dislikes. 3) What influences your choice of what food to eat? 4) How is the decision made about what to eat? 5) Think about healthy eating – a. Would you say you eat healthy? b. Are there any changes you could make in your diet to eat healthier? c. What do you think stops you from eating healthy or healthier? 6) Do you have food cravings? How do you handle them? 7) Do you eat until you feel stuffed or full? Why? Why not? a. Do you eat differently when there is lot of food in the house? b. Do you have any past experiences with eating that effect your eating choices? 8) When do you choose not to eat enough? 9) What is your preferred method of food preparation (cooking, seasoning)? 10)How do you make choices about what food preparation method to use and when? 11)What health information do you need to make healthy eating choices? 12) If you could design a program to help teenagers make healthy eating choices, what will it look like?
	ENVIRONMENT
MICROSYSTEM: HOME	13) Think about home cooking – what foods are generally eaten at home? a. How are these home cooked foods different from foods eaten away from home? b. How often do you have family meals?
SCHOOL	14) Think about eating at school (work) – what foods do you usually choose to eat? 15) Do the school policies (type of foods at school, lunch times, vending machine use, closed campus, etc.) influence your eating choices? How?
COMMUNITY	16) Now think about when you are in a group of

	your friends in the neighborhood (co-workers at your job) – what foods do you choose to eat?
MESOSYSTEM	17) Is there a difference in what you eat when you are eating with family, with friends, co-workers or when you are alone? How or give an example. 18) Do the way you eat (food choices) with one group influence how and what you eat with the other group? How?
EXOSYSTEM	19)Think about your neighborhood or local community – a. What kinds of foods are available to you or your family where you live? b. Do you think this has a role in what foods are eaten at home? Or away from home? c. Describe the store where you shop for groceries. (Convenience stores, supermarket, grocery?) d. Why do you choose to shop at that store? e. How far is that store from your house? f. Tell me about your experience when you go shopping. g. Is there any preparation involved? h. How often do you go shopping?
MACROSYSTEM	20) What does the word culture mean to you? a. What role does culture play in your choice of foods to buy? Prepare? eat? Is culture important in food choice, purchase, preparation? b. What do you think are the differences in food choices or food preparation for African Americans than for other groups? c. What are the similarities? d. Are there traditions (e.g. holidays [like New Years, Juneteenth, Kwanza, July 4th], birthdays, baptisms) that incorporate special foods that you generally only see in your family or other African American families' celebrations? e. Do you think there is a difference between African American cultural foods and southern foods? 21) Lets talk about your cultural/ family roots. 22) How do the American or Black media influence What you eat?

Rev:2/17/06

REFERENCES

Arroba, T. (1977). Styles of decision making and their use: An empirical study. *BritishJournal of Guidance and Counseling, 5*, 149-158.

American Heart Association. (2005). Overweight in children. Retrieved October 12, 2005 from http://www.americanheart.org/prensenter.jhtml?identifier=4670.

Barry, D., & Grilo, C. (2002). Eating and body image disturbances in adolescent psychiatric inpatients: Gender and ethnicity patterns. *International Journal of Eating Disorders, 32*, 335-343.

Bauer, K., Yang, Y., & Austin, S. (2004). How can we stay healthy when you're throwing all of this in front of us? Findings from focus groups and interviews in middle school on environmental influences on nutrition and physical activity. *Health Education & Behavior, 31*, 34-46.

Baughcum, A., Chamberlin, L., Deeks, C., Powers, S. & Whitaker, R. (2000). Maternal perceptions of overweight preschool children. *Pediatrics, 106*, 1380-1386.

Beech, B., Kumanyika, S., Baranowski, T., Davis, M., Robinson, T., Sherwood, N., et al. (2004). Parental cultural perspectives in relation to weight- related behaviors and concerns of African-American girls. *Obesity Research, 12*, (Supplement) 7S – 19S.

Bronfenbrenner, U. (1979*). The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.

Bronfenbrenner, U., & Ceci, S. (1994). Nature-nurture reconceptualized in developmental perspective: A bioecological model. *Psychological Review, 101*, 568-586.

Center for Disease Control. (2002). Obesity prevalence. Retrieved October 12, 2005 from http://www.cdc.gov/nccdphp/dnpa/obesity/.

Center for Disease Control. (2006). Obesity prevalence. Retrieved April 6, 2007 from http://www.cdc.gov/nccdphp/dnpa/obesity/childhood/prevalence.htm.

Chenitz, W., & Swanson, J. (1986). *From practice to grounded theory, qualitative research in nursing*. Menlo Park, CA: Addison-Wesley.

Cohen, M., Kahn, D., & Steeves, R. (2000). *Hermeneutic Phenomenological Research: A practical guide for nurse researchers*. Thousand Oaks: Sage.

Conway, T., Sallis, J., Pelletier, R., Powers, H., Marshall, S, & Zive, M., et al. (2002). What do middle school children bring in their bag lunches? *Preventive Medicine, 34*, 422-427.

Contento, I., Williams, S., Michela, J., & Franklin, A. (2006). Understanding the food choice process of adolescents in the context of family and friends. *Journal of Adolescent Health, 38*, 575-582.

Counihan, C., & Van Esterik, P. (1997). *Food and culture: A reader*. New York: Routledge.

Croll, J., Neumark-Sztainer, D., & Story, M. (2001). Healthy Eating: What does it mean to adolescents? *Journal of Nutrition Education, 33*, 193-198.

Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*. Thousand Oaks, CA.: Sage.

Cullen, K., Baranowski, T., Rittenberry, L., Cosart, C., Owens, E., Hebert, D., et al. (2000). Socioenvironmental influences on children's fruit, juice and vegetable

consumption as reported by parents: reliability and validity of measures. *Nutrition Society, 3*, 345-356.

Devers, K. (1998). How will we know "good" qualitative research when we see it? Beginning the dialogue in health services research. In K. Devers, S. Sofaer, T. Rundall (Eds.). *Qualitative Methods in Health Services Research: A special supplement to Health Services Research*. (pp. 1153-1188). Rockville, MD: Fairfax.

Dwyer, J., Evans, M., Stone, E., Feldman, H., Lytle, L., Hoelscher, D., et al. (2001). Adolescents' eating patterns influence their nutrient intakes. *Journal of the American Dietetic Association, 101*, 798-802.

Edmonds, J., Baranowski, T., Baranowski, J., Cullen, K., & Myers, D. (2001). Ecological and socioeconomic correlates of fruit, juice, and vegetable consumption among African American boys. *Preventive Medicine, 32*, 476-481.

Erikson, E. (1968). *Identity: Youth in crisis*. New York: WW Norton.

Eyler, A., Haire-Joshu, D., Brownson, R., & Nanney, M. (2004). Correlates of fat intake among urban, low income African Americans. *American Journal of Health Behavior, 28*, 410 – 417.

French, S., Story, M., Neumark-Sztainer, D., Fulkerson, J., & Hannan, P. (2001). Fast food restaurant use among adolescents: Associations with nutrient intake, food choices, and behavioral and psychosocial variables. *International Journal of Obesity, 25*, 1823-1833.

Gates, H., & Appiah, K. (2005.) *Africana: The encyclopedia of the African and African American experience* (2nd ed). Oxford: Oxford University Press.

Gillman, M., Rifas-Shiman, S., Frazier, L., Rockett, H. Camargo, C., Field, A., et al (2000). Family dinner and diet quality among older children and adolescents. *Archive of Family Medicine, 9*, 235-240.

Glaser, B. (1978). *Theoretical sensitivity: Advances in the methodology of grounded theory*. Mill Valley, CA.: The Sociology Press.

Glaser, B., & Strauss, A. (1967). *The discovery of grounded theory: Strategies for qualitative research.* Hawthorne, NY: Aldine De Gruyter.

Grzywacz, J., & Fuqua, J. (2000). The social ecology of health: Leverage points and linkages. *Behavioral Medicine, 26*, 101-115.

Hahn, R. (1995). *Sickness and healing: An anthropological perspective*. New Haven: Yale University Press.

Hargreaves, M., Schlundt, D., & Buchowski, M. (2002). Contextual factors influencing the eating behaviours of African American women: A focus group investigation. *Ethnicity and Health, 7*, 133-147.

Helman, C.G. (2000). Diet and nutrition. In *Culture, health and illness* (4th ed.). (pp. 37 -62). Oxford: Butterworth-Heinemann.

Hudson, H., & Stern, H. (2000). *The heart of the matter: The African American's guide to heart disease, heart treatment, and heart wellness*. Roscoe, Il.: Hilton Publishing Company.

Institute of Medicine (2002). *Fact sheets childhood obesity: Schools*. Retrieved February 24, 2006 from http://www.iom.edu/?id=22704.

James, D. (2004). Factors influencing food choices, dietary intake, and nutrition-related attitudes among African Americans: Application of a culturally sensitive model.

Ethnicity and Health, 9, 349-367.

Jenkins, S., & Horner, S. (2005). Barriers that influence eating behaviors in adolescents. *Journal of Pediatric Nursing, 20*, 258-267.

Jeon, Y. (2004). The application of grounded theory and symbolic interactionism. *Scandinavian Journal of Caring Science, 18*, 249-256.

Johnson, W., Rohan, K., & Kirk, A. (2002). Prevalence and correlates of binge eating in white and African American adolescents. *Eating Behaviors, 3*, 179-189.

Johnson, R. (1978). Individual styles of decision making: A theoretical model for counseling. *Personnel and Guidance Journal, 27*, 530-536.

Krueger, R. (1998). *Developing questions for focus groups*. Thousand Oaks, CA: Sage.

Krueger, R., & Casey, M. (2000). *Focus Groups: A practical guide for applied research*. (3rd ed.). Newbury Park: Sage.

Kubik, M., Lytle, L., Hannan, P., Perry, C., & Story, M. (2003). The association of the school food environment with dietary behaviors of young adolescents. *American Journal of Public Health, 93*, 1168-1173

Lerner, R., & Castellino, D. (2002). Contemporary developmental theory and adolescence: Developmental systems and applied developmental science. *Journal of Adolescent Health, 31*, 122-135.

Lytle, L., Himes, J., Feldman, H., Zive, M., Dwyer, J., Hoelscher, D., et al (2002). Nutrient intake over time in a multi-ethnic sample of youth. *Public Health Nutrition, 5*, 319-328.

Lytle, L., Varnell, S., Murray, D., Story, M., Perry, C., Birnbaum, A., et al. (2003). Predicting adolescents' intake of fruit and vegetables. *Journal of Nutrition Education and Behavior, 35*, 170-178.

Morland, K., Wing, S., & Roux, A. (2002). The contextual effects of the local food environment on residents' diets: The atherosclerosis risk in communities study. *American Journal of Public Health, 92*, 1761-7.

Morland, K., Wing, S., Roux, A., & Poole, C. (2002). Neighborhood characteristics associated with the location of food stores and food service places. *American Journal of Preventive Medicine, 22*, 23-27.

Neumark-Sztainer, D., Hannan, P., Story, M., Croll, J., & Perry, C. (2003). Family meal patterns: Associations with sociodemographic characteristics and improved dietary intake among adolescents. *Journal of the American Dietetic Association, 103*, 317-322.

Neumark-Sztainer, D., Story, M., Ackard, D., Moe, J., & Perry, C. (2000a). Family meals among adolescents: Findings from a pilot study. *Journal of Nutrition Education, 32*, 335-340.

Neumark-Sztainer, D., Story, M., Ackard, D., Moe, J., & Perry, C. (2000b). The "family meal:" Views of adolescents. *Journal of Nutrition Education, 32*, 329-334.

Neumark-Sztainer, D., Story, M., Hannan, P., & Croll, J. (2002). Overweight status and eating patterns among adolescents: Where do youths stand in comparison with the Healthy People 2010 objectives? *American Journal of Public Health, 92*, 844-851.

Neumark-Sztainer, D., Story, M., Perry, C., & Casey, A. (1999). Factors influencing food choices of adolescents: Findings from focus group discussions with adolescents. *Journal of the American Dietetic Association, 99*, 929-937.

Neumark-Sztainer, D., Wall, M., Perry, C., & Story, M. (2003). Correlates of fruit and vegetable intake among adolescents: Findings from project EAT. *Preventive Medicine, 37*, 198-208.

Neumark-Sztainer, D., Wall, M., Story, M., & Fulkerson, J. (2004). Are family meal patterns associated with disordered eating behaviors among adolescents? *Journal of Adolescent Health, 35*, 350-359.

Nielsen, S., Siega-Riz, A., & Popkin, B. (2002). Trends in food locations and sources among adolescents and young adults. *Preventive Medicine, 35*, 107-113.

O'Dea, J. (2003). Why do kids eat healthful food? Perceived benefits of and barriers to healthful eating and physical activity among children and adolescents. *Journal of the American Dietetic Association, 103*, 497-501.

O'Neil, C., & Nicklas, T. (2002). Gimme 5: An innovative, school-based nutrition intervention for high school students. *Journal of the American Dietetic Association, 102*, 93-96.

Patrick, K., Sallis, J., Prochaska, J., Lydston, D., Calfas, K., Zabinski, M., et al. (2001) A multicomponent program for nutrition and physical activity change in primary care: PACE+ for adolescents. *Archives of Pediatric & Adolescent Medicine, 155*, 940-946.

Piaget, J. (1969). *The theory of stages in cognitive development.* New York: McGraw-Hill.

Pirouznia, M. (2001). The association between nutrition knowledge and eating behavior in male and female adolescents in the US. *International Journal of Food Sciences and Nutrition, 52*, 127-132.

Rew, L., Bechtel, D., & Sapp, A. (1993). Self as instrument in qualitative research. *Nursing Research, 42*, 300-301.

Ruzek, S.B. (1997). Women, personal health behavior, & health promotion. In S.B.Ruzek, V.L. Olesen, A.E. Clarke (Eds.) *Women's health: Complexities and differences* (pp. 118-153). Columbus, OH: State University Press.

Shannon, C., Story, M., Fulkerson, J., & French, S. (2002). Factors in the school cafeteria influencing food choices by high school students. *Journal of School Health, 72*, 229-234.

Shatenstein, B., & Ghadirian, P. (1998). Influences on diet, health behaviors and their outcome in select ethnocultural and religious groups. *Nutrition, 14*, 223-230.

Sherwood, N., Story, M., Neumark-Sztainer, D., Adkins, S., & Davis, M. (2003). Development and implementation of a visual card-sorting technique for assessing food and activity preferences and patterns in African American girls. *Journal of the American Dietetic Association, 103*, 1473-1479.

Sofaer, S. (1998). Qualitative methods: What are they and why use them? In K. Devers, S. Sofaer, T. Rundall (Eds.). *Qualitative Methods in Health Services Research: A special supplement to Health Services Research.* (pp. 1101-1118). Rockville, MD: Fairfax.

Spear, B. (2002). Adolescent growth and development. *Journal of* t*he American Dietetic Association, 102*(Suppl.3), 23-29.

Story, M., Neumark-Sztainer, D., & French, S. (2002). Individual and environmental influences on adolescent eating behaviors. *Journal of American Dietetic Association, 102*, S40-S51.

Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, Ca: Sage.

Sweeney, N., & Horishita, N. (2005). The breakfast-eating habits of inner city high school students. *The Journal of School Nursing, 21*, 100-105.

Tallman, I., & Gray, L. (1990). Choices, decisions, and problem-solving. *Annual Review of Sociology, 16*, 405-433.

Tirodkar, M., & Jain, A. (2003). Food messages on African American television shows. *American Journal of Public Health, 93*, 439-441.

United States Department of Health and Human Services. (2000). *Healthy People 2010: Understanding and improving health* (2nd ed.). Washington, DC: U.S. Government Printing Office.

Videon, T., & Manning, C. (2003). Influences on adolescent eating patterns: The importance of family meals. *Journal of Adolescent Health, 32*, 365-373.

White, M., Kohlmaier, J., Varnado-Sullivan, P., & Williamson, D. (2003). Racial/ethnic differences in weight concerns: protective and risk factors for the development of eating disorders and obesity among adolescent females. *Eating & Weight Disorders, 8*, 20-25.

Whitney, E., & Rolfes, S. (2002). *Understanding nutrition*. Belmont, CA: Wadsworth/Thompson Learning.

Wildes, J., & Emery, R. (2001) The roles of ethnicity and culture in the development of

eating disturbance and body dissatisfaction: A meta-analytic review. *Clinical Psychology Review, 21,* 521-551.

Xie, B., Gilliland, F., Li, Y., & Rockett, H. (2003). Effects of ethnicity, family income, and education on dietary intake among Adolescents. *Preventive Medicine, 36,* 30-40.

Zenk, S., Schulz, J., Hollis-Neely, T., Campbell, R., Holmes, N., Watkins, G., et al (2005a). Fruit and vegetable intake in African Americans income and store characteristics. *American Journal of Preventive Medicine, 29,* 1-9.

Zenk, S., Schultz, A., Israel, B., James, S., Bao, S., & Wilson, M. (2005b). Neighborhood racial composition, neighborhood poverty, and the spatial accessibility of supermarkets in metropolitan Detroit. *American Journal of Public Health, 95,* 660-667.

Zive, M., Elder, J., Prochaska, J., Conway, T., Pelletire, R., Marshall, S., et al. (2002). Sources of dietary fat in middle schools. *Preventive Medicine, 35,* 376-382.

VITA

Sandra Kay Jenkins was born in Waco, Texas on September 15, 1956, the daughter of Bernice Roberts and Archie Lee Roberts. After completing her work at Jefferson-Moore High School, Waco, Texas, in 1975, she entered Texas Woman's University in Denton, Texas. During the summer of 1978 she attended McLeannan Community College in Waco, Texas. She received the degree of Bachelor of Science in Nursing from Texas Woman's University in December 1979. In July 1991, she entered the Graduate School at the University of Central Texas and earned the degree of Masters of Science in August 1992. In June 1993, she returned to Graduate School at Northwestern State University in Shreveport, Louisiana and received the degree of Masters of Science in Nursing. In August 2002, she entered the Graduate School at the University of Texas in Austin, Texas.

Permanent Address: 3303 Cumberland Drive, Missouri City, Texas 77459

This dissertation was typed by the author.